

 **CUBASE PRO₉**

 **CUBASE ARTIST₉**

Cristina Bachmann, Heiko Bischoff, Christina Kaboth, Insa Mingers, Matthias Obrecht, Sabine Pfeifer, Benjamin Schütte, Marita Sladek

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Introduction

The documentation covers the following Steinberg products: Cubase Pro and Cubase Artist.

Functions that are only available in Cubase Pro and not in Cubase Artist are clearly indicated. The screenshots are taken from Cubase Pro.

Platform-Independent Documentation

The documentation applies to the operating systems Windows and Mac OS.

Features and settings that are specific to one of these platforms are clearly indicated. In all other cases, the descriptions and procedures in the documentation are valid for Windows and Mac OS.

Some points to consider:

- The screenshots are taken from Windows.
- Some functions that are available on the **File** menu on Windows can be found in the program name menu on Mac OS.

About the Documentation

The documentation consists of several documents. You can read them online or download them from **steinberg.help**. To visit **steinberg.help**, do one of the following:

- Enter `www.steinberg.help` in the address bar of your web browser.
- In the program, select **Help > Cubase Help**.

Quick Start Guide

Covers the following areas without going into details:

- System requirements, installation procedure, and license activation.
- Setting up your system for audio and MIDI work.

Operation Manual

The main Cubase reference documentation, with detailed descriptions of operations, parameters, functions, and techniques.

Remote Control Devices

Lists the supported MIDI remote control devices.

Plug-in Reference

Describes the features and parameters of the included VST plug-ins, VST instruments, and MIDI effects.

HALion Sonic SE

Describes the features and parameters of the included VST instrument HALion Sonic SE.

Groove Agent SE

Describes the features and parameters of the included VST instrument Groove Agent SE.

MIDI Devices

Describes how to manage MIDI Devices and device panels.

VST Connect SE (Cubase Pro only)

Describes how to work with the VST Connect SE features.

Conventions

In our documentation, we use typographical and markup elements to structure information.

Typographical Elements

The following typographical elements mark the following purposes.

PREREQUISITE

Requires you to complete an action or to fulfill a condition before starting a procedure.

PROCEDURE

Lists the steps that you must take to achieve a specific result.

IMPORTANT

Informs you about issues that might affect the system, the connected hardware, or that might bring a risk of data loss.

NOTE

Informs you about issues that you should consider.

EXAMPLE

Provides you with an example.

RESULT

Shows the result of the procedure.

AFTER COMPLETING THIS TASK

Informs you about actions or tasks that you can undertake after completing the procedure.

RELATED LINKS

Lists related topics that you can find in this documentation.

Markup

Bold text indicates the name of a menu, option, function, dialog, window, etc.

EXAMPLE

To open the **Functions** menu, click **Functions Menu** in the top right corner of the **MixConsole**.

If bold text is separated by a greater-than symbol, this indicates a sequence of different menus to open.

EXAMPLE

Select **Project > Add Track**.

Key Commands

Many of the default key commands, also known as keyboard shortcuts, use modifier keys, some of which are different depending on the operating system.

For example, the default key command for **Undo** is **Ctrl-Z** on Windows and **Cmd-Z** on Mac OS. When key commands with modifier keys are described in this manual, they are shown with the Windows modifier key first, in the following way:

- Windows modifier key/Mac OS modifier key-key
-

EXAMPLE

Ctrl/Cmd-Z means: press **Ctrl** on Windows or **Cmd** on Mac OS, then press **Z**.

Getting Into the Details

Setting Up Your System

To use Cubase, you must set up your audio, and if required, your MIDI system.

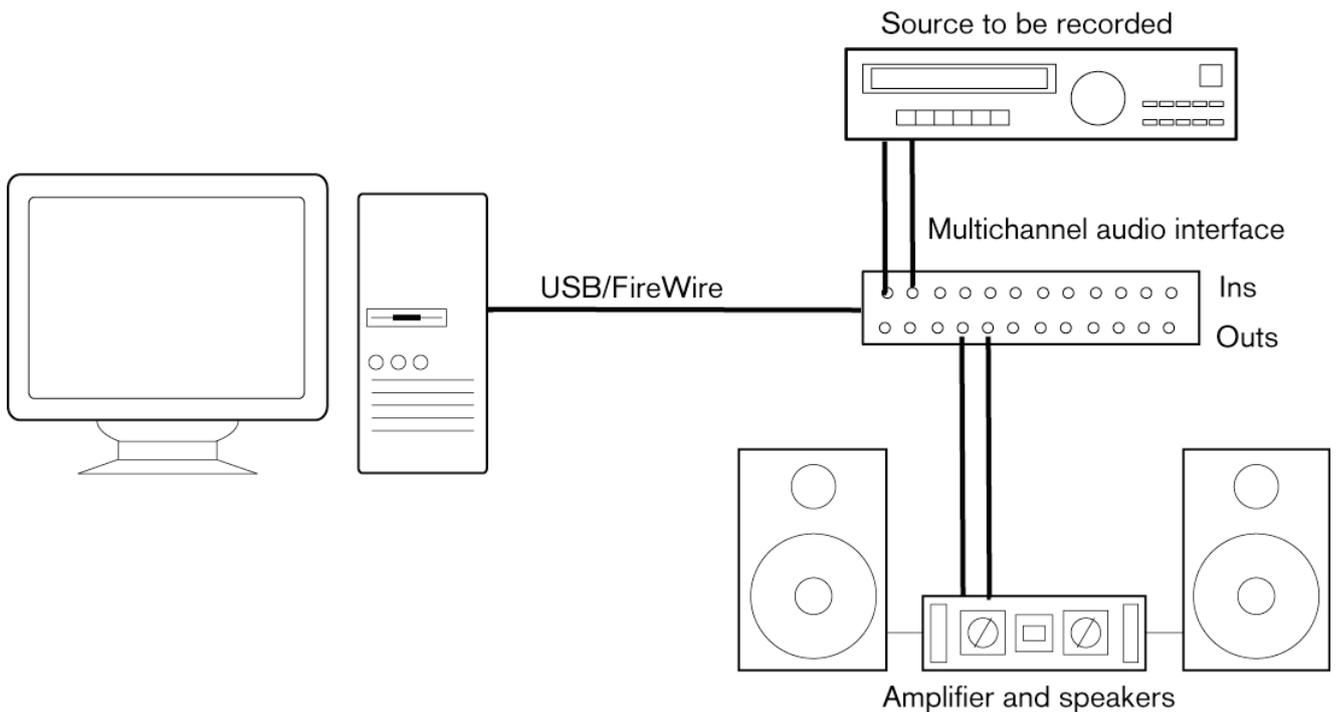
Setting Up Audio

IMPORTANT

Make sure that all equipment is turned off before making any connections.

Simple Stereo Input and Output Setup

If you only use a stereo input and output from Cubase, you can connect your audio hardware, for example, the inputs of your audio card or your audio interface, directly to the input source and the outputs to a power amplifier and speaker.



Audio Connections

Your system setup depends on many different factors, for example, on the kind of project that you want to create, on the external equipment that you want to use, or on the computer hardware that is available to you. Therefore, the following sections can only serve as examples.

How to connect your equipment, that is, whether to use digital or analog connections also depends on your setup.

About Recording Levels and Inputs

When you connect your equipment, make sure that the impedance and levels of the audio sources and inputs are matched. Using the correct type of input is important to avoid distortion or noisy recordings. For microphones, for example, different inputs can be used, such as consumer line level (-10 dBV) or professional line level (+4 dBV).

Sometimes, you can adjust input characteristics on the audio interface or on its control panel. For details, refer to the documentation that came with the audio hardware.

IMPORTANT

Cubase does not provide any input level adjustments for the signals that are coming into your audio hardware, since these are handled differently for each card. Adjusting input levels is either done in a special application that is included with the hardware or its control panel.

Word Clock Connections

If you are using a digital audio connection, you may also need a word clock connection between the audio hardware and external devices. For details, refer to the documentation that came with the audio hardware.

IMPORTANT

Set up word clock synchronization correctly, or you may experience clicks and crackles in your recordings.

Selecting an Audio Driver

By selecting an audio driver, you allow Cubase to communicate with the audio hardware. Normally, when you start Cubase, a dialog opens that prompts you to select a driver, but you can also select your audio hardware driver as described below.

NOTE

On Windows operating systems, we recommend that you access your hardware via an ASIO driver developed specifically for the hardware. If no ASIO driver is installed, contact the manufacturer of your audio hardware for information on available ASIO drivers. If no specific ASIO driver is available, you can use the Generic Low Latency ASIO driver.

PROCEDURE

1. Select **Devices > Devices Setup**.
 2. In the **Devices** list, select **VST Audio System**.
 3. Open the **ASIO Driver** pop-up menu and select your audio hardware driver.
 4. Click **OK**.
-

Setting Up Audio Hardware

PREREQUISITE

You have selected a driver for your audio hardware.

PROCEDURE

1. Select **Devices > Devices Setup**.

- In the **Devices** list to the left, select the driver to open the driver settings for your audio hardware.
- Do one of the following to open the control panel for your audio hardware:
 - On Windows, click **Control Panel**.
 - On Mac OS, click **Open Config App**.This button is available only for some hardware products. If it is not available in your setup, refer to the documentation of your audio hardware.

NOTE

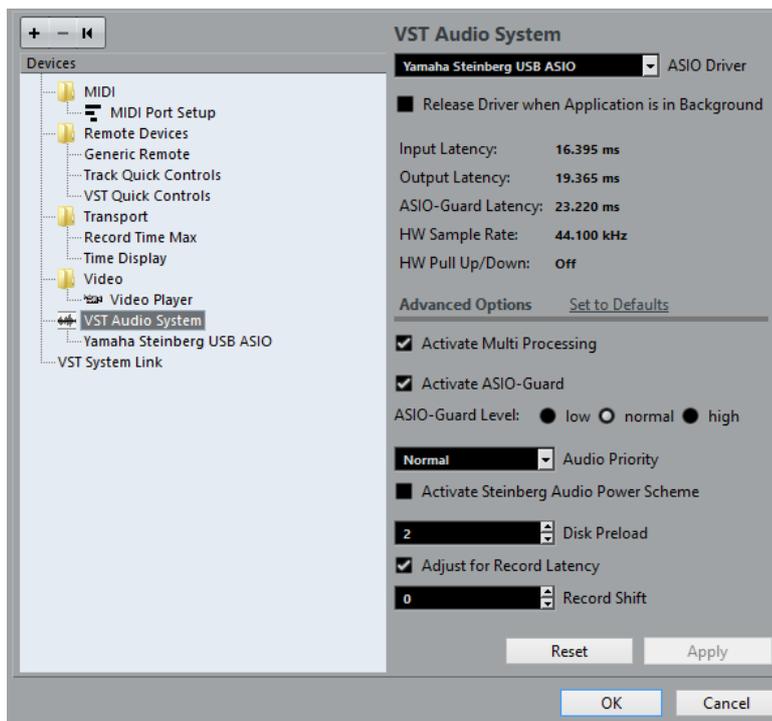
The control panel is provided by the manufacturer of your audio hardware and is different for each audio interface brand and model. However, control panels for the Generic Low Latency ASIO Driver (Windows only) are provided by Steinberg.

- Set up your audio hardware as recommended by the manufacturer.
-

VST Audio System

In the **VST Audio System** section you can select an ASIO driver for your audio hardware.

- To open the **VST Audio System** section, select **Devices > Device Setup** and select **VST Audio System** in the **Devices** list to the left.



The following options are available:

ASIO Driver

Allows you to select a driver.

Release Driver when Application is in Background

Releases the driver and allows other applications to play back via your audio hardware even though Cubase is running.

Input Latency

Shows the input latency of the audio hardware.

Output Latency

Shows the output latency of the audio hardware.

ASIO-Guard Latency

Shows the ASIO-Guard latency.

HW Sample Rate

Shows the sample rate of your audio hardware.

HW Pull Up/Down

Shows the pull up/down status of the audio hardware.

Set to Defaults

Allows you to restore the default settings.

Activate Multi Processing

Allows you to distribute the processing load evenly to all available CPUs. This way, Cubase can make full use of the combined power of multiple processors.

Activate ASIO-Guard

Activates the ASIO-Guard. This is only available, if **Activate Multi Processing** is activated too.

ASIO-Guard Level

Allows you to set the ASIO-Guard level. The higher the level, the higher the processing stability and audio processing performance. However, higher levels also lead to an increased ASIO-Guard latency and memory usage.

Audio Priority (Windows only)

This setting should be set to **Normal**, if you work with audio and MIDI. If you do not use MIDI at all, you can set this to **Boost**.

Activate Steinberg Audio Power Scheme

If this option is activated, all power safe modes that have an impact on realtime processing are deactivated. Note that this is only effective for very low latencies, and that it increases the power consumption.

Disk Preload

Allows you to specify how many seconds of audio are preloaded into RAM prior to starting playback. This allows for smooth playback.

Adjust for Record Latency

If this is activated, the plug-in latencies are taken to account during recording.

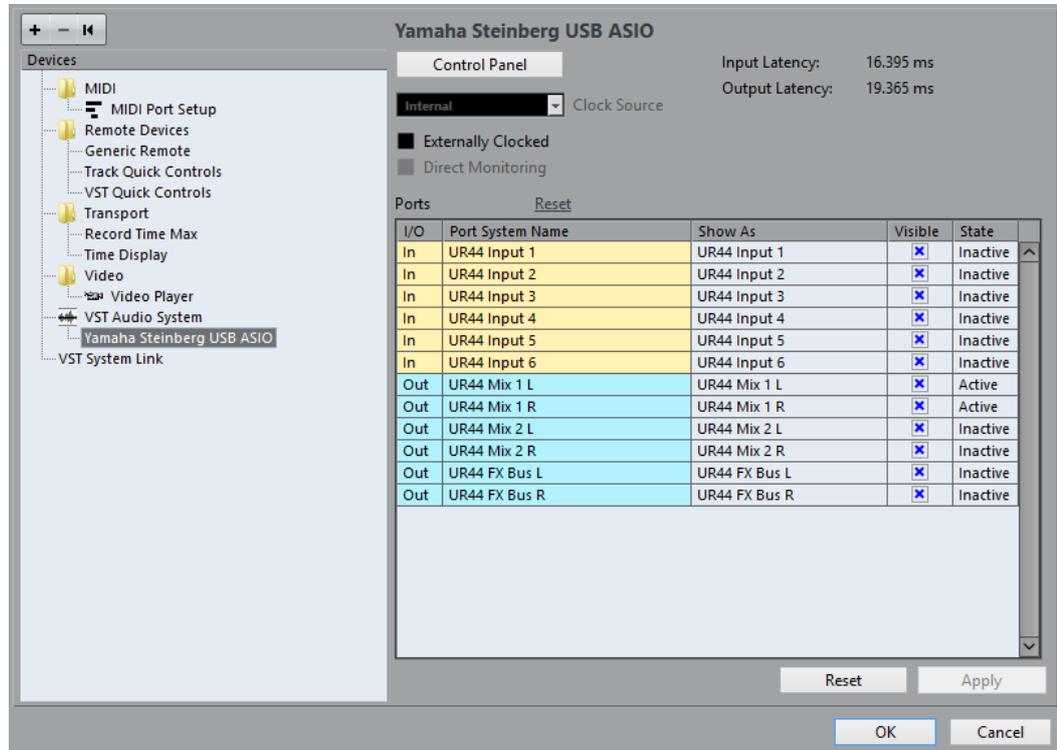
Record Shift

Allows you to shift the recordings by the specified value.

ASIO Driver Setup

This section allows you to set up your ASIO driver.

- To open the section where you can set up the ASIO driver, select **Devices > Device Setup** and select the audio driver in the **Devices** list to the left.



The following options are available:

Control Panel

Opens the control panel for the audio hardware.

Input Latency

Shows the input latency of the audio driver.

Output Latency

Shows the output latency of the audio driver.

Clock Source

Allows you to select a clock source.

Externally Clocked

Activate this option, if you use an external clock source.

Direct Monitoring

Activate this option to monitor via your audio hardware and to control it from Cubase.

Ports Reset

Allows you to reset all port names and visibilities.

I/O

The port input/output status.

Port System Name

The system name of the port.

Show As

Allows you to rename the port. This name is used in the **Input Routing** and **Output Routing** pop-up menus.

Visible

Allows you to activate/deactivate audio ports.

State

The state of the audio port.

Using External Clock Sources

If you are using an external clock source, Cubase must be notified that it receives external clock signals and derives its speed from that source.

PROCEDURE

1. Select **Devices > Devices Setup**.
2. In the **Devices** list, select the page of your audio hardware driver.
3. Activate **Externally clocked**.

RESULT

Cubase now derives its speed from the external source.

NOTE

For proper audio playback and recording, you must set the sample rate of the project to the sample rate of the incoming clock signals.

When a sample rate mismatch occurs, the **Record Format** field on the status line is highlighted in a different color. Cubase accepts a sample rate mismatch, and playback is therefore faster or slower.

Using Several Audio Applications Simultaneously

You can allow other applications to play back via your audio hardware even though Cubase is running.

PREREQUISITE

Other audio applications accessing the audio hardware are set to release the audio driver.

PROCEDURE

1. Select **Devices > Devices Setup**.
 2. In the **Devices** list, select the **VST Audio System** page.
 3. Activate **Release Driver when Application is in Background**.
-

RESULT

The application that has the focus gets access to the audio hardware.

Audio Hardware Configuration

Most audio cards provide one or more small applications that allow you to customize your hardware.

The settings are normally gathered on a control panel that can be opened from within Cubase or separately, when Cubase is not running. For details, refer to the audio hardware documentation.

Settings include:

- Selecting which inputs/outputs are active.
- Setting up word clock synchronization.
- Turning on/off monitoring via the hardware.
- Setting levels for each input.
- Setting levels for the outputs so that they match the equipment that you use for monitoring.
- Selecting digital input and output formats.
- Making settings for the audio buffers.

Plug and Play Support for ASIO Devices

The Steinberg UR hardware series supports plug and play in Cubase. These devices can be plugged in and switched on while the application is running. Cubase automatically uses the driver of the UR series and re-maps the VST connections accordingly.

Steinberg cannot guarantee that this works with other hardware. If you are unsure of whether your device supports plug and play, refer to the documentation of your device.

IMPORTANT

If a device that does not support plug and play is connected or disconnected while the computer is running, it can get damaged.

Setting Up Input and Output Ports

Once you have selected the driver for your audio hardware and have set it up, you must specify which inputs and outputs to use.

PREREQUISITE

You have selected a driver for your audio hardware.

PROCEDURE

1. Select **Devices > Devices Setup**.
 2. In the **Devices** list to the left, select the driver to open the driver settings for your audio hardware.
 3. Make your settings.
 4. Click **OK**.
-

RELATED LINKS

[ASIO Driver Setup](#) on page 17

Audio Bus Setup

Cubase uses a system of input and output busses to transfer audio between the program and the audio hardware.

- Input busses let you route audio from the inputs of your audio hardware into Cubase. This means that audio is always recorded through one or several input busses.
- Output busses let you route audio from Cubase to the outputs of your audio hardware. This means that audio is always played back through one or several output busses.

Once you have set up the internal input and output busses, you can connect your audio source, for example a microphone, to your audio interface and start recording, playing back, and mixing.

RELATED LINKS

[VST Connections](#) on page 24

Monitoring

In Cubase, monitoring means listening to the input signal while recording.

The following ways of monitoring are available.

- Externally by listening to the signal before it reaches Cubase.
- Via Cubase.
- By using ASIO Direct Monitoring.
This is a combination of the other methods.

RELATED LINKS

[External Monitoring](#) on page 227

[Monitoring via Cubase](#) on page 227

[ASIO Direct Monitoring](#) on page 227

Setting Up MIDI

IMPORTANT

Turn off all equipment before making any connections.

PROCEDURE

1. Connect your MIDI equipment (keyboard, MIDI interface, etc.) to your computer.
 2. Install the drivers for your MIDI equipment.
-

RESULT

You can use your MIDI equipment in Cubase.

MIDI Connections

To play back and record MIDI data from your MIDI device, for example, a MIDI keyboard, you need to connect the MIDI ports.

Connect the MIDI output port of your MIDI device to the MIDI input port of your audio hardware. This way, the MIDI device sends MIDI data to be played back or recorded inside your computer.

Connect the MIDI input port of your MIDI device to the MIDI output port of your audio hardware. This way, you can send MIDI data from Cubase to the MIDI device. For example, you can record

your own playing, edit the MIDI data in Cubase, and then play it back on the keyboard and record the audio that is coming out of the keyboard for a better edited performance.

Showing or Hiding MIDI Ports

You can specify if a MIDI port is listed on the MIDI pop-up menus in the program.

PROCEDURE

1. Select **Devices > Device Setup**.
 2. In the **Device Setup** dialog, select **MIDI Port Setup** from the **Devices** list on the left.
 3. To hide a MIDI port, deactivate its **Visible** column.
 4. Click **OK**.
-

Setting Up All MIDI Inputs

When you record MIDI, you can specify which MIDI input each recording MIDI track should use. However, you can also record any MIDI data from any MIDI input. You can specify which inputs are included when you select **All MIDI Inputs** for a MIDI track.

PROCEDURE

1. Select **Devices > Device Setup**.
2. In the **Device Setup** dialog, select **MIDI Port Setup** from the **Devices** list on the left.
3. Activate **In 'All MIDI Inputs'** for a port.

NOTE

If you have a MIDI remote control unit connected, make sure to deactivate the **In 'All MIDI Inputs'** option for that MIDI input. This avoids accidental recording of data from the remote control when **All MIDI Inputs** is selected as input for a MIDI track.

4. Click **OK**.
-

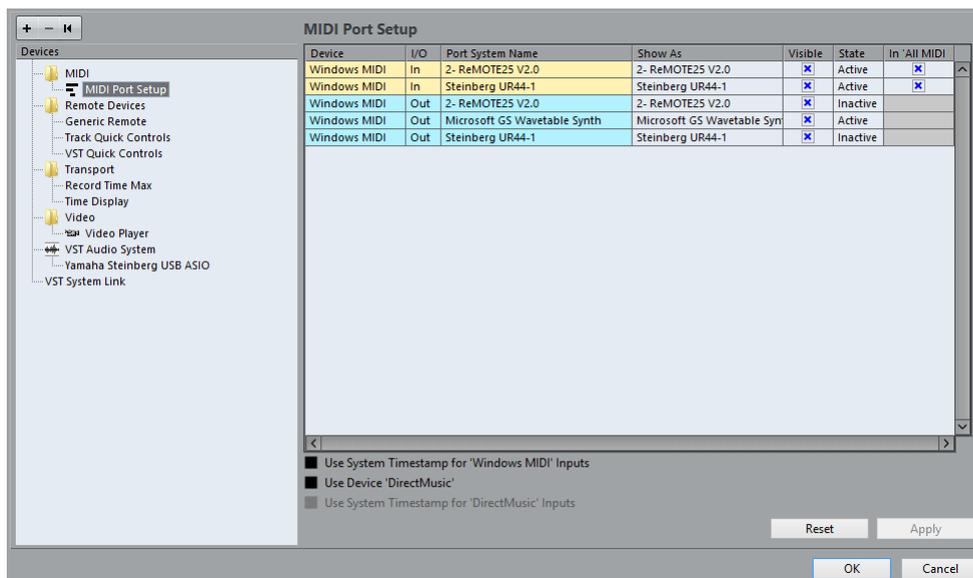
RESULT

When you select **All MIDI Inputs** on the **Input Routing** menu of a MIDI track in the Inspector, the MIDI track uses all MIDI inputs that you specified in the **MIDI Port Setup**.

MIDI Port Setup

The **MIDI Port Setup** section in the **Device Setup** dialog displays the connected MIDI devices and allows you to set up their ports.

- To open the **MIDI Port Setup** section, select **Devices > Device Setup** and activate **MIDI Port Setup** in the **Devices** list to the left.



The following columns are displayed:

Device

The connected MIDI devices.

I/O

The port input/output status.

Port System Name

The system name of the port.

Show As

Allows you to rename the port. This name is used in the **Input Routing** and **Output Routing** pop-up menus.

Visible

Allows you to activate/deactivate MIDI ports.

State

The state of the MIDI port.

In 'All MIDI Inputs'

Allows you to record MIDI data from all MIDI inputs.

NOTE

Deactivate this option, if you use remote control devices.

The following options are available:

Use System Timestamp for 'Windows MIDI' Inputs

Activate this option if you have persistent timing problems such as shifted notes. If this is activated, the system timestamp is used as a time reference.

Use Device 'DirectMusic'

If you do not use a device with a DirectMusic device driver, you can leave this option deactivated. This enhances the system performance.

Use System Timestamp for 'DirectMusic' Inputs

Activate this option if you have persistent timing problems such as shifted notes. If this is activated, the system timestamp is used as a time reference.

Plug and Play Support for USB MIDI Devices

Cubase supports plug and play of USB MIDI devices. These devices can be plugged in and switched on while the application is running.

Connecting a Synchronizer

When using Cubase with external tape transports, you most likely must add a synchronizer to your system.

IMPORTANT

Make sure that all equipment is turned off before making any connections.

For information on how to connect and set up your synchronizer, refer to the documentation of your synchronizer.

RELATED LINKS

[Synchronization](#) on page 905

Setting Up Video

Cubase plays back video files in a number of formats, such as AVI, QuickTime, or MPEG. QuickTime is used as the playback engine. Which formats can be played back depends on the video codecs that are installed on your system.

There are several ways to play back video, for example, without any special hardware, using a FireWire port, or using dedicated video cards.

If you plan to use special video hardware, install it and set it up as recommended by the manufacturer.

NOTE

Before you use the video hardware with Cubase, we recommend that you test the hardware installation with the utility applications that were provided with the hardware and/or the QuickTime Player application.

RELATED LINKS

[Video](#) on page 926

[Video Output Devices](#) on page 928

VST Connections

To play back and record in Cubase, you must set up input and output busses in the **VST Connections** window. Here, you can also set up group and FX channels, external effects, external instruments, and the **Control Room** (Cubase Pro only).

The bus types that you need depend on your audio hardware, on your general audio setup, for example your surround speaker setup, and on the projects that you use.

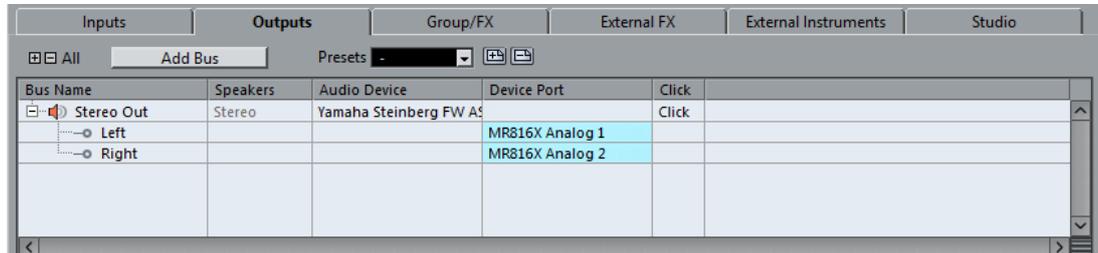
VST Connections Window

The **VST Connections** window allows you to set up input and output busses, group and FX channels, external effects, and external instruments. Furthermore, you can use this window to access and configure the **Control Room** (Cubase Pro only).

- To open the **VST Connections** window, select **Devices > VST Connections**.

Inputs/Outputs Tab

The **Input** and **Output** tabs allow you to set up and configure input and output busses.



The following options are available above the bus list:

+ - All

Expands/Collapses all busses in the bus list.

Add Bus

Opens the **Add Input Bus** dialog, where you can create a new bus configuration.

Presets

Opens the **Presets** menu, where you can select bus configuration presets. **Store**

 allows you to save a bus configuration as preset. **Delete**  deletes the selected preset.

The following columns are available for the bus list:

Bus Name

Lists the busses. Click the name of a bus to select or rename it.

Speakers

Indicates the speaker configuration (mono, stereo, surround formats (Cubase Pro only)) of each bus.

Audio Device

Shows the selected ASIO driver.

Device Port

Shows which physical inputs/outputs on your audio hardware are used by the bus. Expand the bus entry to show all speaker channels. If the bus entry is collapsed, only the first port that is used by this bus is visible.

The **Device Port** pop-up menu displays how many busses are connected to a given port. The busses are shown in square brackets next to the port name.

Up to 3 bus assignments can be displayed in this way. If more connections have been made, this is indicated by a number at the end of the port name.

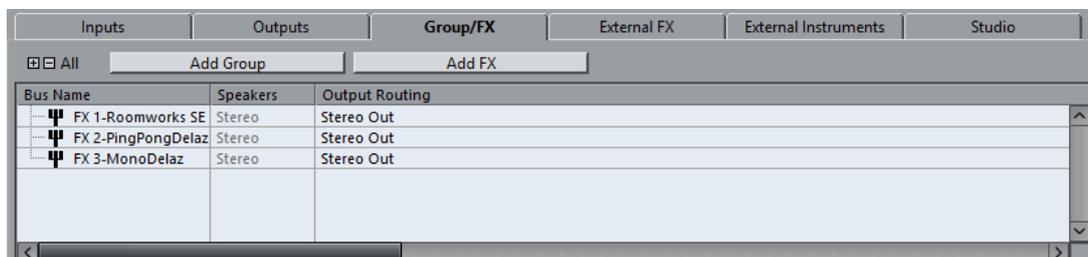
For example, "Adat 1 [Stereo1] [Stereo2] [Stereo3] (+2)" means that the Adat 1 port is already assigned to 3 stereo busses plus 2 additional busses.

Click (Outputs tab only)

You can route the metronome click to a specific output bus, regardless of the actual **Control Room** output, or even when the **Control Room** is disabled.

Group/FX Tab

This tab allows you to create group and FX channels/tracks and to make output assignments for these.



The following options are available above the bus list:

+ - All

Expands/Collapses all busses in the bus list.

Add Group

Opens the **Add Group Channel Track** dialog, where you can create a new group channel track.

Add FX

Opens the **Add FX Channel Track** dialog, where you can create a new FX channel track.

The following columns are available for the bus list:

Bus Name

Lists the busses. Click the name of a bus to select or rename it.

Speakers

Indicates the speaker configuration (mono, stereo, surround formats (Cubase Pro only)) of each bus.

Output Routing

Lets you select the output routing for the corresponding bus.

External FX Tab (Cubase Pro only)

This tab allows you to create send effect or return busses. You can use these to connect external effects which can then be selected via the effect pop-up menus from inside the program.

Bus Name	Speakers	Audio Device	Device Port	Delay	Send Gain	Return Gain	MIDI Device	Used
External Effect	Stereo/Stereo			0.00 ms (0)	0.00 dB	0.00 dB	No Link	
Send Bus 1	Stereo	Yamaha Steinberg FW ASIO						
Left			MR816CSX Analog 3					
Right			MR816CSX Analog 4					
Return Bus 1	Stereo	Yamaha Steinberg FW ASIO						
Left			MR816CSX Analog 5					
Right			MR816CSX Analog 6					

The following options are available above the bus list:

+ - All

Expands/Collapses all busses in the bus list.

Add External FX

Opens the **Add External FX** dialog, where you can configure a new external FX.

Favorites

Lets you store external effect configurations as favorites that you can recall.

The following columns are available for the bus list:

Bus Name

Lists the busses. Click the name of a bus to select or rename it.

Speakers

Indicates the speaker configuration (mono, stereo, surround formats (Cubase Pro only)) of each bus.

Audio Device

Shows the selected ASIO driver.

Device Port

Shows which physical inputs/outputs on your audio hardware are used by the bus. Expand the bus entry to show all speaker channels. If the bus entry is collapsed, only the first port that is used by this bus is visible.

The **Device Port** pop-up menu displays how many busses are connected to a given port. The busses are shown in square brackets next to the port name.

Up to 3 bus assignments can be displayed in this way. If more connections have been made, this is indicated by a number at the end of the port name.

For example, “Adat 1 [Stereo1] [Stereo2] [Stereo3] (+2)” means that the Adat 1 port is already assigned to 3 stereo busses plus 2 additional busses.

Delay

Allows you to enter a value to compensate for an inherent delay (latency) of your hardware effect device during playback. You can right-click the **Delay** column for the effect and select **Check User Delay** to automatically determine the delay value.

NOTE

The latency of the audio hardware is handled automatically by Cubase.

Send Gain

Allows you to adjust the level of the signal that is sent to the external effect.

Return Gain

Allows you to adjust the level of the signal that the external effect sends.

NOTE

Excessive output levels from an external effect device can cause clipping in the audio hardware. You cannot use the **Return Gain** setting to compensate for this. You must lower the output level on the effect device instead.

MIDI Device

When you click in this column, a pop-up menu opens where you can disconnect the effect from the associated MIDI device, select a MIDI device, create a new device, or open the **MIDI Device Manager** to edit the MIDI device.

Used

Whenever you insert an external effect into an audio track, this column shows a checkmark (x) to indicate that the effect is being used.

External Instruments Tab (Cubase Pro only)

This tab allows you to create input/output busses that can be used to connect external instruments.

Bus Name	Speakers	Audio Device	Device Port	Delay	Return Gain	MIDI Device	Used
External Instrument	1 Return(s)			0.00 ms (0)	0.00 dB	No Link	
Return Bus 1	Stereo	Yamaha Steinberg FW AS					
Left			MR816X Analog 7				
Right			MR816X Analog 8				

The following options are available above the bus list:

+ - All

Expands/Collapses all busses in the bus list.

Add External Instrument

Opens the **Add External Instrument** dialog, where you can configure a new external instrument.

Favorites

Lets you store external instrument configurations as favorites that you can recall.

The following columns are available for the bus list:

Bus Name

Lists the busses. Click the name of a bus to select or rename it.

Speakers

Indicates the speaker configuration (mono, stereo, surround formats (Cubase Pro only)) of each bus.

Audio Device

Shows the selected ASIO driver.

Device Port

Shows which physical inputs/outputs on your audio hardware are used by the bus. Expand the bus entry to show all speaker channels. If the bus entry is collapsed, only the first port that is used by this bus is visible.

The **Device Port** pop-up menu displays how many busses are connected to a given port. The busses are shown in square brackets next to the port name.

Up to 3 bus assignments can be displayed in this way. If more connections have been made, this is indicated by a number at the end of the port name.

For example, "Adat 1 [Stereo1] [Stereo2] [Stereo3] (+2)" means that the Adat 1 port is already assigned to 3 stereo busses plus 2 additional busses.

Delay

Allows you to enter a value to compensate for an inherent delay (latency) of your hardware effect device during playback. You can right-click the **Delay** column for the instrument and select **Check User Delay** to automatically determine the delay value that is used for delay compensation.

NOTE

The latency of the audio hardware is handled automatically by Cubase.

Return Gain

Allows you to adjust the level of the signal coming in from the external instrument.

NOTE

Excessive output levels from an external effect device can cause clipping in the audio hardware. The **Return Gain** setting cannot be used to compensate for this. You must lower the output level on the effect device instead.

MIDI Device

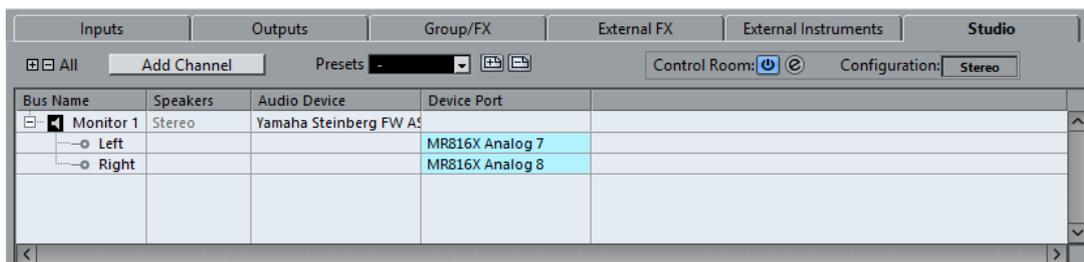
When you click in this column, a pop-up menu opens where you can disconnect the instrument from the associated MIDI device, select a MIDI device, create a new device, or open the **MIDI Device Manager** to edit the MIDI device.

Used

Whenever you insert the external instrument into a VST instrument slot, this column shows a checkmark (x) to indicate that the instrument is being used.

Studio Tab (Cubase Pro only)

This tab allows you to enable and configure the **Control Room**.



The following options are available above the bus list:

+ - All

Expands/Collapses all busses in the bus list.

Add Channel

Opens a menu where you can select the type of channel that you want to add. You can add the following channels:

- External Input
- Talkback
- Cue
- Headphone
- Monitor

Presets

Opens the **Presets** menu, where you can select bus configuration presets. **Store**  allows you to save a bus configuration as preset. **Delete**  deletes the selected preset.

Control Room

Activates/Deactivates the **Control Room**.

Control Room Mixer

Opens the **Control Room Mixer** window, where you can set up the **Control Room**.

Configuration

Displays the selected channel configuration.

The following columns are available for the bus list:

Bus Name

Lists the busses. Click the name of a bus to select or rename it.

Speakers

Indicates the speaker configuration (mono, stereo, surround formats (Cubase Pro only)) of each bus.

Audio Device

Shows the selected ASIO driver.

Device Port

Shows which physical inputs/outputs on your audio hardware are used by the bus. Expand the bus entry to show all speaker channels. If the bus entry is collapsed, only the first port that is used by this bus is visible.

The **Device Port** pop-up menu displays how many busses are connected to a given port. The busses are shown in square brackets next to the port name.

Up to 3 bus assignments can be displayed in this way. If more connections have been made, this is indicated by a number at the end of the port name.

For example, "Adat 1 [Stereo1] [Stereo2] [Stereo3] (+2)" means that the Adat 1 port is already assigned to 3 stereo busses plus 2 additional busses.

RELATED LINKS

[Control Room \(Cubase Pro only\)](#) on page 352

Renaming the Hardware Inputs and Outputs

Before you set up busses, you should rename the default inputs and outputs of your audio hardware. This allows transferring projects between different computers and setups.

For example, if you move your project to another studio, the audio hardware may be of a different model. But if you and the other studio owner have agreed on identical names for your inputs and outputs, Cubase corrects inputs and outputs for your busses.

NOTE

If you open a project that was created on another computer and the port names do not match or the port configuration is not the same, the **Missing Ports** dialog appears. This allows you to manually re-route ports that are used in the project to ports that are available on your computer.

PROCEDURE

1. Select **Devices > Device Setup**.
 2. On the **VST Audio System** page, make sure that the correct driver for your audio hardware is selected.
If this is the case, your audio card is listed in the **Devices** list on the left of the **Device Setup** window.
 3. In the devices list, select your audio card.
The available input and output ports on your audio hardware are listed on the right.
 4. In the **Show As** column, click on a port name and enter a new name.
 5. Repeat the previous step until you have renamed all required ports.
 6. Click **OK**.
-

RELATED LINKS

[Re-Routing Missing Ports](#) on page 92

Hiding Ports

You can hide ports that you are not using. Hidden ports are not displayed in the **VST Connections** window.

PROCEDURE

1. Select **Devices > Device Setup**.

2. In the devices list, select your audio card.
 3. In the **Visible** column, deactivate the ports that you want to hide.
 4. Click **OK**.
-

Activating and Deactivating Ports (Mac only)

On Mac operating systems, you can specify which input and output ports are active. This allows you to use the microphone input instead of the line input or to deactivate the audio card input or output.

NOTE

This function is only available for built-in audio, standard USB audio devices, and a certain number of other audio cards.

PROCEDURE

1. Select **Devices > Device Setup**.
 2. In the devices list, select your audio card.
 3. Click **Control Panel**.
 4. Activate/Deactivate ports.
 5. Click **OK**.
-

Adding Input and Output Busses

PROCEDURE

1. In the **VST Connections** dialog, click the **Inputs** or **Outputs** tab.
 2. Click **Add Bus**.
 3. In the **Add Input Bus** dialog, configure the bus.
 4. Optional: Enter a name for the bus.
If you do not specify a name, the bus is named according to the channel configuration.
 5. Click **Add Bus**.
The new bus is added to the bus list.
 6. For each of the speaker channels in the bus, click in the **Device Port** column and select a port of your audio hardware.
-

Setting the Default Output Bus (Main Mix)

The **Main Mix** is the default output bus to which each new audio, group, or FX channel is automatically routed. If only one bus is available, this bus is automatically used as the default output bus.

PREREQUISITE

Add an output bus.

PROCEDURE

1. In the **VST Connections** dialog, right-click the output bus that you want to use as default output bus.

2. Select **Set <bus name> as Main Mix**.
-

RESULT

The selected bus is used as default bus. The **Main Mix** is indicated by a speaker icon next to its name.

Adding Child Busses (Cubase Pro only)

Child busses allow you to route tracks to particular channels within a bus.

For example, you can route a stereo track to a stereo channel pair within a surround bus. Or you can record a stereo channel pair in the surround bus to a separate stereo track.

PROCEDURE

1. On the **Inputs** tab, **Outputs** tab, or **Group/FX** tab, right-click a surround bus.
 2. Click **Add Child Bus** and select a channel configuration.
-

RESULT

The child bus is created and can be used for routing.

Presets for Input and Output Busses

For input and output bus configurations, you can use different kinds of presets.

- A number of standard bus configurations.
- Automatically created presets tailored to your specific hardware configuration.
On startup, Cubase analyzes the physical inputs and outputs that are provided by your audio hardware and creates a number of hardware-dependent presets.
- Your own presets.

NOTE

You can create default presets for input and output bus configurations. If you create a new empty project, these default presets are applied. To create default presets, save your preferred input and output bus configurations under the name `Default`. If you have not defined default presets, the last used input and output bus configuration is applied when creating a new empty project.

Saving a Bus Configuration Preset

You can save your own input and output bus configuration and the studio configuration as presets.

PROCEDURE

1. Select **Devices > VST Connections**.
 2. Set up your bus configuration.
 3. Click **Store** .
 4. In the **Type in Preset Name** dialog, enter a name.
 5. Click **OK**.
-

RESULT

The preset is available in the **Presets** menu.

Deleting a Bus Configuration Preset

PROCEDURE

1. Select **Devices > VST Connections**.
 2. From the **Presets** menu, select the preset that you want to delete.
 3. Click **Delete** .
-

RESULT

The preset is deleted.

Adding Group and FX Channels

Group channels and FX channels allow you to group bus configurations.

Adding group and FX channels in the **VST Connections** window is identical to creating group channel tracks or FX channel tracks in the **Project** window.

PROCEDURE

1. In the **VST Connections** dialog, click the **Group/FX** tab.
 2. Do one of the following:
 - To create a group channel, click **Add Group**.
 - To create an FX channel, click **Add FX**.
 3. Configure the channel.
 4. Optional: Enter a name for the group channel track.
 5. Click **Add Track**.
The group channel or FX channel is added to the bus list.
 6. For each of the speaker channels in the bus, click in the **Output Routing** column and select a port of your audio hardware.
-

RELATED LINKS

[Audio Effects](#) on page 371

About Monitoring

In the **VST Connections** window, you can set up the busses that are used for monitoring, activate/deactivate the **Control Room**, and open the **Control Room Mixer**.

When the **Control Room** is disabled on the **Studio** tab of the **VST Connections** window, the **Main Mix** bus is used for monitoring. In this case, you can adjust the monitoring level in the **MixConsole**.

In Cubase Artist, the **Main Mix** bus is always used for monitoring.

RELATED LINKS

[Control Room \(Cubase Pro only\)](#) on page 352

[MixConsole](#) on page 295

External Instruments and Effects (Cubase Pro only)

You can integrate external effect devices and external instruments, for example, hardware synthesizers, into the sequencer signal flow.

Requirements

- To use external effects, you need audio hardware with multiple inputs and outputs. An external effect requires at least one input and one output or input/output pairs for stereo effects in addition to the input/output ports that you use for recording and monitoring.
- To use external instruments, a MIDI interface must be connected to your computer.
- Audio hardware with low-latency drivers.
Cubase compensates for the input/output latency and ensures that the audio that is processed through external effects is not shifted in time.

Connecting an External Instrument/Effect

PREREQUISITE

The hardware device has stereo inputs and outputs.

PROCEDURE

1. Connect an unused output pair on your audio hardware to the input pair on your external hardware device.
2. Connect an unused input pair on your audio hardware to the output pair on your hardware device.

IMPORTANT

If you select input/output ports for external instruments/effects that are already used, the existing port assignment breaks without warning.

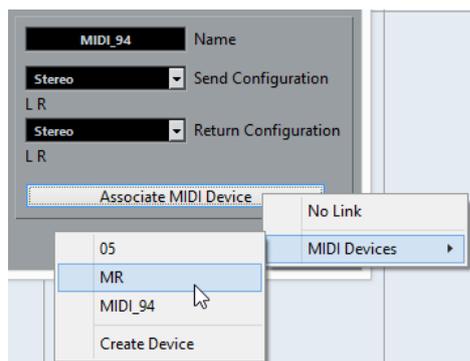
AFTER COMPLETING THIS TASK

Once the external device is connected to the audio hardware of your computer, you must set up the input/output busses in Cubase.

Setting Up External Effects

PROCEDURE

1. In the **VST Connections** window, click the **External FX** tab.
2. Click **Add External FX**.
3. In the **Add External FX** dialog, enter a name for the external effect and specify the send and return configurations.
Depending on the type of effect, you can specify mono, stereo, or surround configurations.
4. Click **Associate MIDI Device** and select a MIDI device.



You can also select **MIDI Devices > Create Device** and create a new MIDI device association.

NOTE

Delay compensation is only applied for the effect when you use MIDI devices.

5. Click **OK**.
This adds a new external FX bus.
6. Click in the **Device Port** column for the left and right ports of the send bus and select the outputs of your audio hardware that you want to use.
7. Click in the **Device Port** column for the left and right ports of the return bus and select the inputs of your audio hardware that you want to use.
8. Make additional settings for the bus.
You can also adjust the settings while using the external effect. This allows you to hear the result.

RELATED LINKS

[Using MIDI devices](#) on page 649

[Delay Compensation](#) on page 606

Adding External Effects

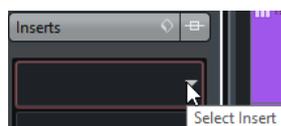
You can use the external FX bus as an insert effect or as a send effect, which is an insert effect on an FX channel track.

PREREQUISITE

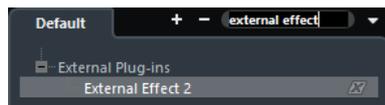
Set up your external effects in the **VST Connections** window.

PROCEDURE

1. In the **Inspector**, open the **Inserts** panel.
2. Open the **Select Insert** menu.



3. Select an external effect from the **External Plug-ins** submenu.
External effects are indicated by an **x** icon in the list next to their names in the **Select Insert** pop-up menu.



RESULT

The external FX bus is loaded into the effect slot.

A parameter window opens, showing the Delay, Send Gain, and Return Gain settings for the external FX bus. You can adjust these settings while playing back.

The audio signal from the channel is sent to the outputs on the audio hardware, through your external effect device, and back to the program via the inputs on the audio hardware.

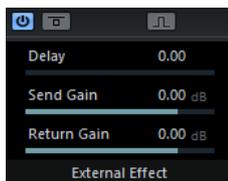
RELATED LINKS

[Setting Up External Effects](#) on page 34

External Effect Parameter Window

This window allows you to make delay and gain settings for the selected external effect.

When you select an external effect from the **Select Insert** menu in the **Inspector**, the **External Effect Parameter** window opens.



Activate Effect



Activates/Deactivates the external effect.

Bypass Effect



Allows you to bypass the external effect.

Measure Effect's Loop Delay for Delay Compensation



If this option is activated, Cubase automatically determines the delay value that is used for delay compensation. This is the same function as the **Check User Delay** option in the **VST Connections** window.

When you have defined a MIDI device for the effect, the corresponding device window opens.

Delay

Allows you to adjust the delay for the external effect.

Send Gain

Allows you to adjust the send gain for the external effect.

Return Gain

Allows you to adjust the return gain for the external effect.

Setting Up External Instruments

PROCEDURE

1. In the **VST Connections** window, click the **External Instruments** tab.
 2. Click **Add External Instrument**.
 3. In the **Add External Instrument** dialog, enter a name for the external instrument and specify the number of required mono and/or stereo returns.
Depending on the type of instrument, a specific number of mono and/or stereo return channels is required.
 4. Click **Associate MIDI Device** and select a MIDI device.
 5. Click **OK**.
This adds a new external instrument bus.
 6. Click in the **Device Port** column for the left and right ports of the return bus and select the inputs of your audio hardware to which you connected the external instrument.
 7. Make additional settings for the bus.
You can also adjust the settings while using the external instrument. This allows you to hear the result.
-

RELATED LINKS

[Using MIDI devices](#) on page 649

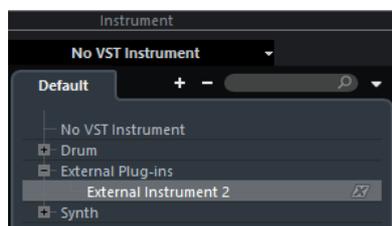
Adding External Instruments

PREREQUISITE

Set up your external instruments in the **VST Connections** window.

PROCEDURE

1. Select **Devices > VST Instruments**.
The **VST Instruments** window opens.
2. Click **Add Track Instrument** .
The **Add Instrument Track** window opens.
3. Select an external instrument from the **Instrument** pop-up menu.
External instruments are indicated by an **x** icon in the list next to their names in the **Instrument** pop-up menu.



4. Click **Add Track**.
-

RESULT

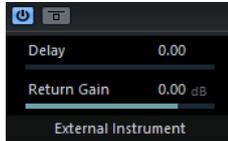
The external instrument is added to the VST instruments list.

A parameter window for the external instrument opens. This can either be the device window that allows you to create a generic device panel, an OPT editor window, or a default editor.

External Instruments Parameter Window

This window allows you to make delay and gain settings for the selected external instrument.

When you select an external instrument in the **VST Instruments** window, the **External Instrument Parameter Window** opens.



Activate External Instrument



Activates/Deactivates the external instrument.

Bypass External Instrument



Allows you to bypass the external instrument.

Delay

Allows you to adjust the delay for the external instrument.

Return Gain

Allows you to adjust the return gain for the external instrument.

Sending MIDI Notes to External Instruments

PREREQUISITE

Set up your external instruments in the **VST Connections** window and add a MIDI track.

PROCEDURE

1. In the **Inspector**, open the **Output Routing** pop-up menu for the corresponding MIDI track.
2. Select the MIDI device to which the external instrument is connected.

RESULT

The instrument plays any MIDI notes that it receives from the track and returns them to Cubase through the return channels that you have set up. Delay compensation is used.

The external instrument behaves like any other VST instrument in Cubase.

RELATED LINKS

[Delay Compensation](#) on page 606

Saving External Instrument and Effect Configurations as Favorites

You can save external instruments and external effects as favorites. Favorites are device configurations that you can recall. They also allow you to save different configurations for the same device, for example, a multi-effect board or an effect that provides both a mono and a stereo mode.

You can save and restore the favorites in the **External Instruments** and **External FX** tabs of the **VST Connections** window.

- To save an external instrument or effect configuration as a favorite, select the **Bus Name**, click **Favorites**, and select **Add Selected Effect <effect name> to Favorites**.
- To recall a favorite, click **Favorites** and select the configuration that you want to recall.

Freezing External Instruments/Effects

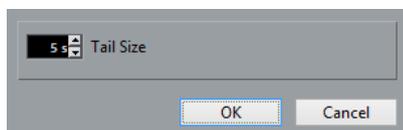
You can freeze external instruments and effects to save processing power.

NOTE

You must perform the freeze function in realtime. Otherwise external effects are not taken into account.

When freezing external instruments or effects, you can adjust the corresponding **Tail Size** value in the **Freeze Channel Options** dialog.

When the **Tail Size** is set to 0 s, freezing only takes into account the data within the part boundaries.



RELATED LINKS

[VST Instruments](#) on page 598

[Audio Effects](#) on page 371

[Freezing Instruments](#) on page 604

[Freezing Insert Effects](#) on page 378

Missing Plug-ins

The "Plug-in could not be found" message appears in the following situations:

- When you remove an external device from the **VST Connections** window although it is used in a saved project.
- When you transfer a project to another computer on which the external device is not defined.
- When you open a project that is created with an earlier version of Cubase.

In the **VST Connections** window, the broken connection to the external device is indicated by an icon in the **Bus Name** column.

- To reestablish the broken connection to the external device, right-click the entry for the device in the **Bus Name** column and select **Connect External Effect**.

NOTE

Busses that are set up for external instruments or external effects are saved globally, that is, for your particular computer setup.

Editing the Bus Configurations

After you have set up all the required busses for a project you can edit the names and change port assignments. The bus configuration is saved with the project.

Removing Busses

PROCEDURE

- In the **VST Connections** window, right-click a bus in the list and select **Remove Bus**. You can also select the bus and press **Backspace**.
-

Changing Port Assignments

You can change the port assignment of busses in the **VST Connection** window.

- To change a port assignment, click in the **Device Port** column of a bus and select a new port.
- To assign different ports to the selected busses, open the **Device Port** pop-up menu for the first selected entry, press **Shift**, and select a device port. All subsequent busses are automatically connected to the next available port.

NOTE

Cubase Pro only: Exclusive ports, for example, ports that are already assigned to **Control Room** channels, are skipped.

- To assign the same port to all selected busses, open the **Device Port** pop-up menu for the first selected entry, press **Shift-Alt**, and select a device port.

Renaming Multiple Busses

You can rename all the selected busses at once using incrementing numbers or letters.

- To use incrementing numbers, select the busses that you want to rename and enter a new name for one of the busses, followed by a number. For example, if you have 8 inputs that you want to be named "In 1, In 2, ..., In 8", you select all the busses and enter the name `In 1` for the first bus. All other busses are then renamed automatically.
- To use letters from the alphabet, select the busses that you want to rename and enter a new name for one of the busses, followed by a space and a capital letter. For example, if you have 3 FX channels that you want to be named "FX A, FX B, and FX C", you select all the channels and enter the name `FX A` for the first. All other channels are renamed automatically. The last letter that can be used is Z. If you have more selected entries than there are letters available, the remaining entries are skipped.

NOTE

You can begin renaming from any position in the list. The renaming starts from the bus where you edit the name, goes down the list to the bottom, and then continues from the top until all selected busses have been renamed.

Identifying Exclusive Port Assignments

For certain channel types, the port assignment is exclusive.

Once a port has been assigned to such a bus or channel, it must not be assigned to another bus, otherwise the connection to the first bus will be broken.

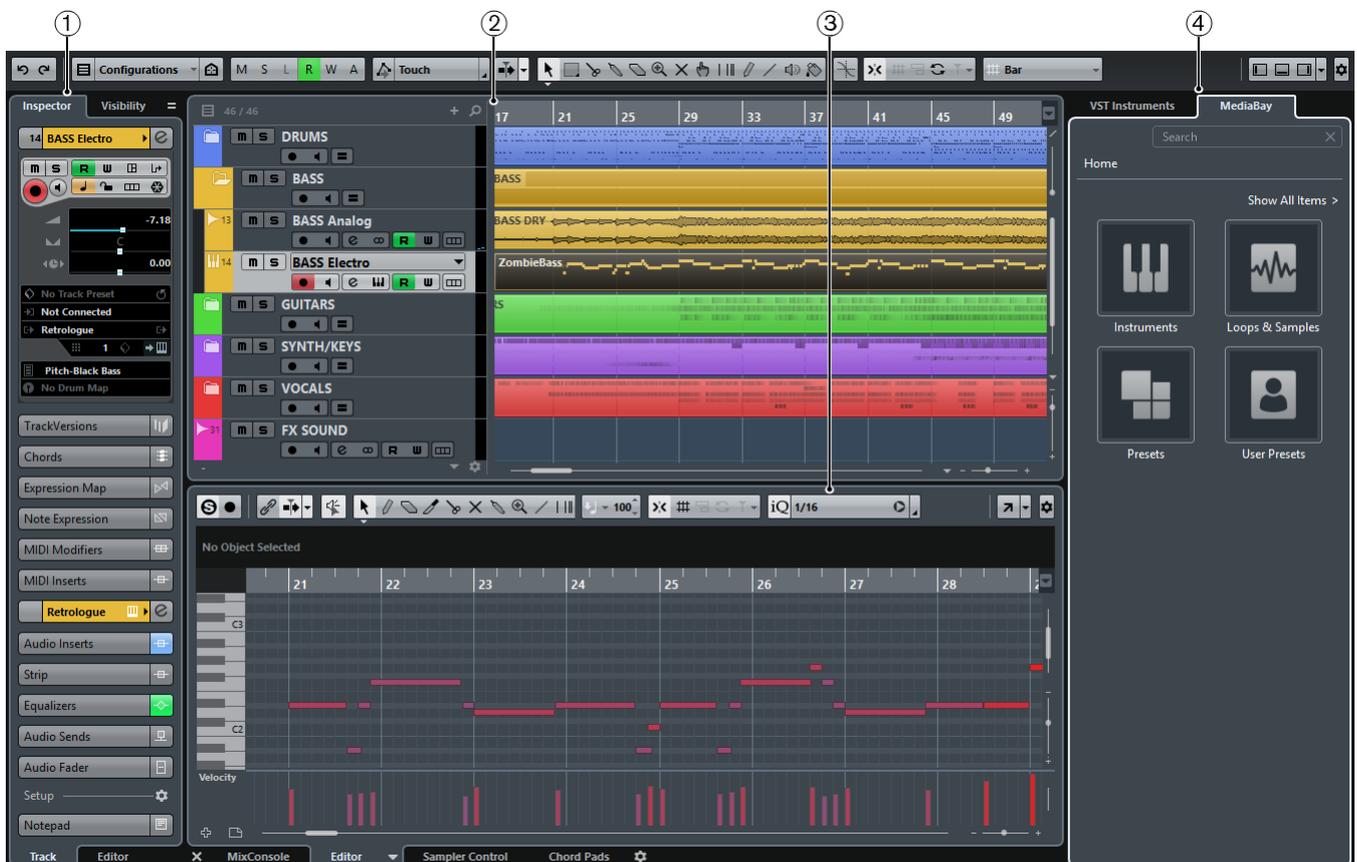
The corresponding ports are marked in the **VST Connections** window on the **Device Port** pop-up menu.

Project Window

The **Project** window provides an overview of the project, and allows you to navigate and perform large scale editing.

Each project has one **Project** window. The **Project** window is displayed whenever you open or create a new project.

- To open a project, select **File > Open**.
- To create a new project, select **File > New Project**.



The **Project** window is divided into several zones:

1. Left Zone

The left zone shows the **Track Inspector** for the selected track or the **Editor Inspector** for the editor in the lower zone.

The **Visibility Inspector** allows you to show or hide individual tracks from the track list.

2. Project Zone

The project zone shows the toolbar, the track list with the tracks, the event display with the parts and events of the project, and the **Project** window ruler.

On the toolbar, you can activate/deactivate the status line, the info line, the overview line, and the transport.

3. Lower Zone

The lower zone shows the **Chord Pads**, the **Editor**, the **Sampler Control**, and the **MixConsole**.

4. Right Zone

The right zone shows the **VST Instruments** rack and the **MediaBay** rack.

RELATED LINKS

[Project Zone](#) on page 43

[Left Zone](#) on page 55

[Lower Zone](#) on page 65

[Right Zone](#) on page 71

[Toolbar](#) on page 44

Showing/Hiding Zones

You can show/hide the zones in the **Project** window according to your needs.

PROCEDURE

- Do one of the following:
 - To show/hide the left zone, click **Show/Hide Left Zone**  on the **Project** window toolbar.
 - To show/hide the lower zone, click **Show/Hide Lower Zone**  on the **Project** window toolbar.
 - To show/hide the right zone, click **Show/Hide Right Zone**  on the **Project** window toolbar.

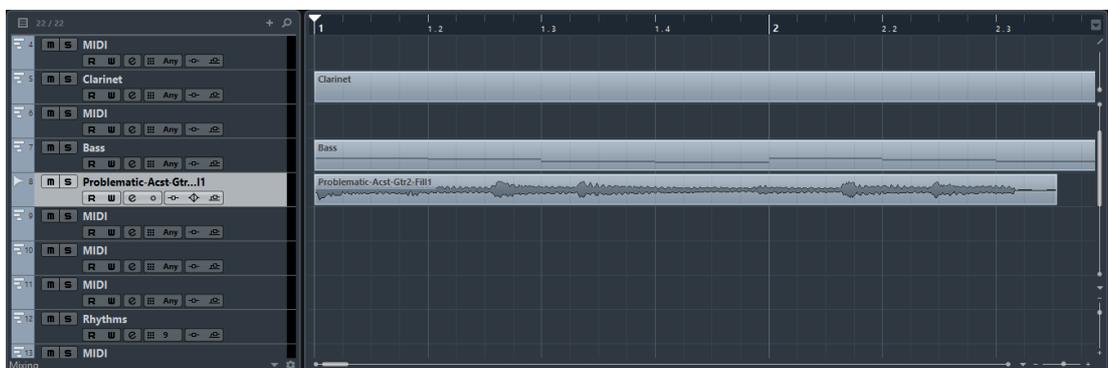
NOTE

The project zone is always shown.

Project Zone

The project zone is the heart of the **Project** window and cannot be hidden.

The project zone features the track list and the event display with the ruler. Furthermore, you can activate/deactivate the status line, the info line, the overview line, and the transport for the project zone.



RELATED LINKS

- [Track List](#) on page 48
- [Event Display](#) on page 49
- [Global Track Controls](#) on page 49
- [Ruler](#) on page 50
- [Status Line](#) on page 52
- [Info Line](#) on page 52
- [Overview Line](#) on page 53
- [Transport](#) on page 53

Toolbar

The toolbar contains tools and shortcuts for opening other windows and various project settings and functions.

- To show/hide tools, open the toolbar context menu by right-clicking in an empty area of the toolbar and activate the tools that you want to display. To show all tools, select **Show All**.

NOTE

The number of elements that are shown also depends on the size of the Project window and the screen resolution.

The following options are available:

Activate Project



NOTE

This button is only available, if more than one project is open.

Allows you to activate a project.

Project History



Allows you to undo/redo actions in the **Project** window.

Constrain Delay Compensation



Allows you to minimize the latency effects of the delay compensation.

Left Divider



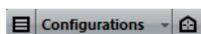
Allows you to use the left divider. Tools that are placed to the left of the divider are always shown.

Media & MixConsole Windows



These buttons allow you to open or close the **MediaBay**, the **Pool**, the **MixConsole**, and the **Control Room Mixer** (Cubase Pro only).

Track Visibility Configurations



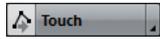
Allows you to create configurations that are useful for switching between different visibility setups.

State Buttons



These buttons show the mute, solo, listen, and automation states.

Automation Mode (Cubase Pro only)



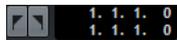
Shows the automation mode and allows you to open the **Automation Panel**.
Activate **Automation Follows Events** if you want your automation events to follow automatically when you move an event or part on a track.

Auto-Scroll



Allows you to keep the project cursor visible during playback.

Locators



Allows you to go to the left or right locator position, and to set the left and right locator position numerically.

Shows the left and right locator positions.

Transport Buttons



Shows the main transport controls.

External Sync State



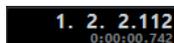
Allows you to activate/deactivate external synchronization and to open the **Project Synchronization Setup** dialog.

Arranger Controls



Shows the controls for the arranger track.

Time Display



Shows the position of the project cursor in the selected time format.

Markers



Allows you to set and locate marker positions.

Tool Buttons



Shows the buttons for editing in the project zone.

Color Menu



Allows you to define the project colors.

Nudge Palette



Allows you to nudge or trim events or parts.

Project Root Key



Allows you to change the root key of the project.

Snap to Zero Crossing



If this option is activated, it finds zero crossings when you split and size audio events.

Snap On/Off



Allows you to activate/deactivate snap to restrict horizontal movement and positioning to certain positions.

Snap Type



Allows you to specify to what positions you want events to snap.

Grid Type



Allows you to specify a grid type for the snap function. This setting only has effect if **Snap Type** is set to one of the grid options.

Quantize



Allows you to move recorded audio or MIDI to musical relevant positions.

Performance Meter



Shows the meters for ASIO time usage and hard disk transfer load.

Right Divider



Allows you to use the right divider. Tools that are placed to the right of the divider are always shown.

Window Zone Controls



Allows you to show or hide the left zone, the lower zone, and the right zone of the **Project** window. The **Setup Window Layout** pop-up menu allows you to show or hide the status line, the info line, the overview line, and the **Transport**.

Set Up Toolbar



Opens a pop-up menu where you can set up which toolbar elements are visible.

RELATED LINKS

[Left/Right Toolbar Divider](#) on page 47

[Snap Types](#) on page 80

[Arranger Track](#) on page 268

[Markers](#) on page 285

[Automation](#) on page 578

[Synchronization](#) on page 905

Left/Right Toolbar Divider

The left and right toolbar dividers allow you to lock the position of specific tools at the left or at the right side of the toolbar, so that they are always shown.

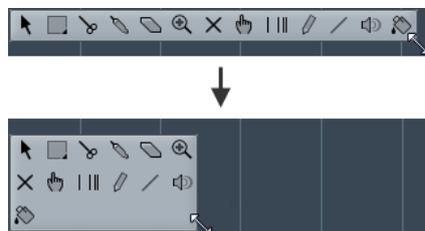
All other items are shown in the center of the toolbar. When you reduce the width of the **Project** window, these toolbar items are hidden successively. When you increase the width, they are shown again.

Toolbox

The toolbox makes the editing tools from the toolbar available at the mouse pointer position. It can be opened instead of the standard context menus in the event display and editors.



- To activate the toolbox function, open the **Preferences** dialog, select **Editing > Tools** and activate **Pop-up Toolbox on Right-Click**.
- To open the toolbox, right-click in the event display or editor.
If **Pop-up Toolbox on Right-Click** is deactivated, the context menu opens.
- To open the context menu instead of the toolbox, press any modifier key and right-click in the event display or editor.
If **Pop-up Toolbox on Right-Click** is deactivated, press any modifier key to open the toolbox instead of the context menu.
- To change the number of rows in which the tools are arranged on the toolbox, keep the right mouse button pressed on the toolbox until the mouse pointer changes to a double arrow, and drag to the bottom or right.



Track List

The track list shows the tracks that are used in the project. When a track is added and selected, it contains name fields and settings for this track.



- To decide which controls are visible for each track type, right-click the track list and open the **Track Controls Settings** dialog.

RELATED LINKS

[Track Control Settings](#) on page 98

Dividing the Track List

You can divide the track list into an upper track list and a lower track list. These track lists can have independent zoom and scroll controls.

Dividing the track list is useful if you are working with a video track and multi-track audio, for example. It allows you to place the video track in the upper track list and to scroll the audio tracks separately in the lower track list, so that they can be arranged with the video.

- To divide the track list, select **Project > Divide Track List**.
You can also click **Divide Track List** in the top right corner of the **Project** window below the ruler.

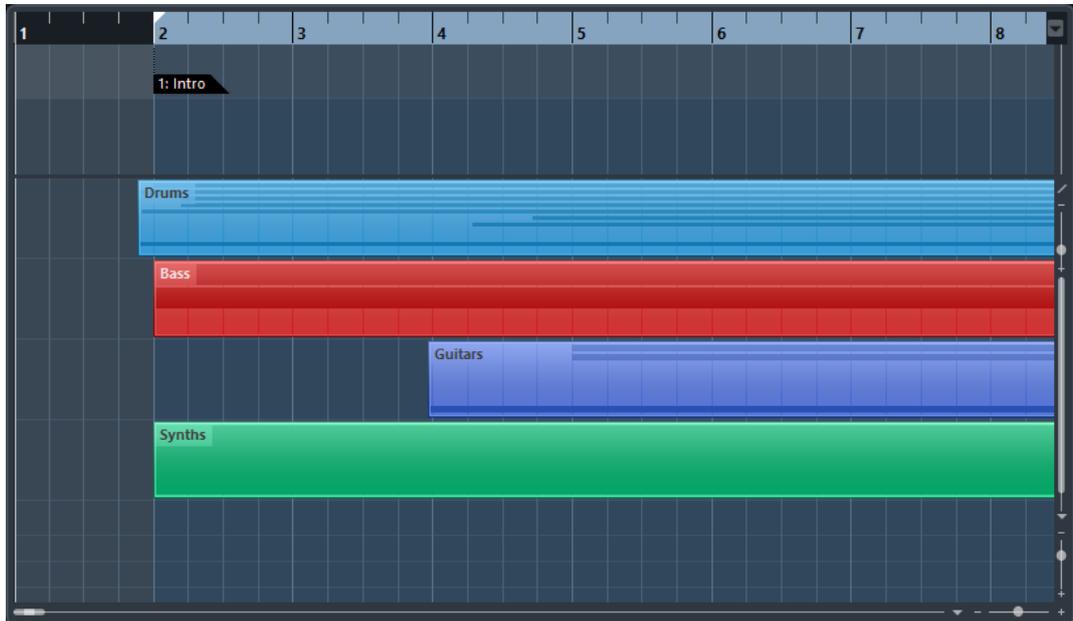


Video, marker, or arranger tracks are automatically moved to the upper track list. All other track types are moved to the lower track list.

- To move any type of track from the lower track list to the upper and vice versa, right-click it in the track list and select **Toggle Track List** from the context menu.
- To resize the upper part of the track list, click and drag the divider between the track list sections.
- To revert to a single track list, click **Divide Track List** again.

Event Display

The event display shows the parts and events that are used in the project. They are positioned along the timeline.



Global Track Controls

The global track controls above the track list allows you to manage the tracks in the track list.



- 1. Filter Track Types**
Allows you to determine which track types are shown in the track list.
- 2. Number of Visible Tracks**
Displays how many tracks are hidden. Click this, to show all tracks that are filtered out with the **Track Visibility**.

NOTE

If the track was outside the view or hidden, it is now shown. Tracks that are hidden using **Filter Track Types** are not shown.

- 3. Add Track**
Allows you to add tracks to the track list.
- 4. Find Tracks**
Allows you to find and select a specific track in the track list.

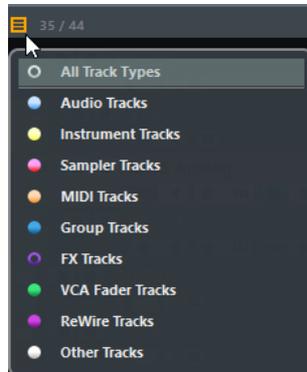
RELATED LINKS

[Opening the Track Visibility](#) on page 62

Filtering Track Types

PROCEDURE

1. Click **Filter Track Types** above the track list.
This opens the track types filter.



2. Click a dot to the left of a track type to hide it.
-

RESULT

Tracks of the filtered type are removed from the track list and the color of the **Filter Track Types** button changes to indicate that a track type is hidden.

Finding Tracks

The **Find Tracks** function allows you to find specific tracks. This is useful if you have a large project with many tracks or if you have hidden tracks using the track visibility features.

PROCEDURE

1. Click **Find Tracks** above the track list, to open a selector that lists all tracks.
 2. In the search field, enter the name of the track.
As you type, the selector updates automatically.
 3. In the selector, select the track and press **Return**.
-

RESULT

The selector closes and the track is selected in the track list.

NOTE

If the track was outside the view or hidden, it is now shown. Tracks that are hidden using **Filter Track Types** are not shown.

Ruler

The ruler shows the timeline and the display format of the project.



Initially, the **Project** window ruler uses the display format that is specified in the **Project Setup** dialog.

- To select an independent display format for the ruler, click the arrow button to the right of the ruler and select an option from the pop-up menu.

- To set the display format globally for all windows, use the primary display format pop-up on the Transport panel, or hold down **Ctrl/Cmd** and select a display format in any ruler.

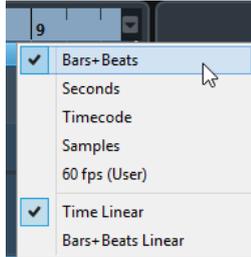
RELATED LINKS

[Project Setup Dialog](#) on page 88

Ruler Display Formats

You can select a display format for the ruler.

- To select a new display format for the ruler, click the arrow button to the right of the ruler and select an option from the pop-up menu.



The selection that you make affects the time display formats in the following areas:

- Ruler
- Info line
- Tooltip position values

The following options are available:

Bars+Beats

Bars, beats, sixteenth notes, and ticks. By default, there are 120 ticks per sixteenth note. To change this, open the **Preferences** dialog, select **MIDI**, and adjust the **MIDI Display Resolution** setting.

Seconds

Hours, minutes, seconds, and milliseconds.

Timecode

Hours, minutes, seconds, and frames. The number of frames per second (fps) is set in the **Project Setup** dialog with the **Frame Rate** pop-up menu. To display subframes, open the **Preferences** dialog, select **Transport**, and activate **Show Timecode Subframes**.

Samples

Samples.

fps (User)

Hours, minutes, seconds, and frames, with a user-definable number of frames per second. To display subframes, open the **Preferences** dialog, select **Transport**, and activate **Show Timecode Subframes**. You can also set the number of fps.

Time Linear

Sets the ruler linear to time.

Bars+Beats Linear

Sets the ruler linear to bars and beats.

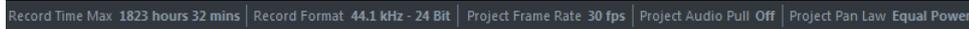
Status Line

The status line shows the most important project settings.

To activate the status line, click **Set up Window Layout** on the toolbar and activate **Status Line**.



The following information is shown on the status line:



Audio Inputs/Audio Outputs

These fields are shown, if the audio device ports are not connected. Click to open the **VST Connections** dialog and connect the ports.

Record Time Max

Displays the remaining time for recording, depending on your project settings and the available hard disk space. Click in this field to display the remaining record time in a separate window.

Record Format

Displays the sample rate and the bit resolution used for recording. Click in this field to open the **Project Setup** dialog.

Project Frame Rate

Displays the frame rate used in the project. Click in this field to open the **Project Setup** dialog.

Project Pan Law

Displays the current pan law setting. Click in this field to open the **Project Setup** dialog.

Info Line

The info line shows information about the event or part that you selected in the project zone.

Name	Start	End	Length	Offset	Mute	Lock	Transpose	Global Transpose	Velocity	Root Key
MIDI 01	1. 1. 1. 0	2. 2. 1. 0	1. 1. 0. 0	0. 0. 0. 0	-	-	0	Follow	0	-

To activate the info line, click **Set up Window Layout** on the toolbar and activate **Info Line**.



Editing on the Info Line

You can edit almost all event or part data on the info line using regular value editing.

If you select several events or parts, the info line is shown in another color and only the information about the first item in the selection is displayed. The following rules apply:

- Value changes are applied to all selected elements, relatively to the current values. For example, you have selected two audio events. The first event has a length of 1 bar, the second of 2 bars. If you change the info line value to 3, the first event is resized to 3 bars and the second event to 4 bars.

- Value changes are applied absolutely to the current values if you press **Ctrl/Cmd** while modifying the value on the info line.
In the example above, both events are resized to 3 bars.

NOTE

To change the modifier, open the **Preferences** dialog, select **Editing > Tool Modifiers** and select a new modifier in the **Info Line** category.

Overview Line

The overview line allows you to zoom and navigate to other sections in the project.



To activate the overview line, click **Set up Window Layout** on the toolbar and activate **Overview Line**.



In the overview line, events and parts are displayed as boxes. A rectangle indicates the section of the project that is displayed in the event display.

- To zoom the event display in or out horizontally, resize the rectangle by dragging the edges.
- To navigate to another section of the event display, drag the rectangle to the left or right, or click in the upper part of the overview.

Transport

The **Transport** allows display the transport functions in an integrated and fixed zone of the **Project** window.



- To activate the **Transport**, click **Set up Window Layout** on the **Project** window toolbar and activate **Transport**.



- To show/hide tools, open the **Transport** context menu by right-clicking in an empty area of the **Transport** and activate the tools that you want to display. To show all tools, select **Show All**.

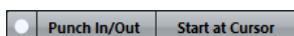
The following options are available:

Constrain Delay Compensation



Allows you to minimize the latency effects of the delay compensation.

Common Record Modes



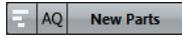
Allow you to determine what happens if you click **Record** during an audio or MIDI recording.

Audio Record Modes



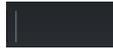
Allow you to select what happens when you record over existing audio events.

MIDI Record Modes



Allow you to select what happens when you record over existing MIDI parts.

Left Divider



Allows you to use the left divider. Tools that are placed to the left of the divider are always shown.

Performance Meter



Shows the meters for ASIO time usage and hard disk transfer load.

Locators



Allows you to go to the left or right locator position, and to set the left and right locator position numerically.

Punch Points



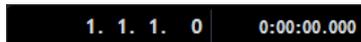
Allows you to set the punch in and the punch out points that determine the record start and stop positions.

Main Transport



Shows the main transport controls.

Time Displays



Shows the time display options.

Pre-roll & Post-roll



Allows you to activate/deactivate pre-roll and post-roll, and to set the values numerically.

Tempo & Time Signature



Allows you to activate/deactivate the tempo track, and to set the tempo value and the first time signature value numerically.

Click & Pre-Count & External Sync



Allows you to activate/deactivate the metronome click, the metronome click in precount, and the external synchronization.

Right Divider



Allows you to use the right divider. Tools that are placed to the right of the divider are always shown.

Input/Output Activity



Allows you to monitor the MIDI input/output signals, the audio input/output signals, and allows you to control the output level.

RELATED LINKS

[Common Record Modes](#) on page 226

[Audio Record Modes](#) on page 231

[MIDI Record Modes](#) on page 237

[Left/Right Toolbar Divider](#) on page 47

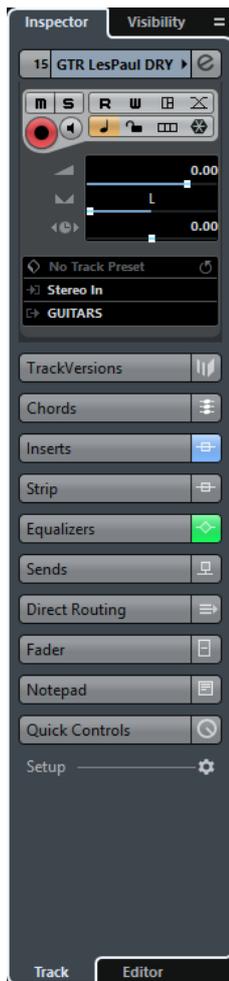
Left Zone

The left zone of the **Project** window allows you to display the **Inspector** and the **Visibility**.

To show/hide the left zone, click **Show/Hide Left Zone** on the **Project** window toolbar.



The top of the left zone features two tabs: **Inspector** and **Visibility**.



RELATED LINKS

[Inspector](#) on page 56

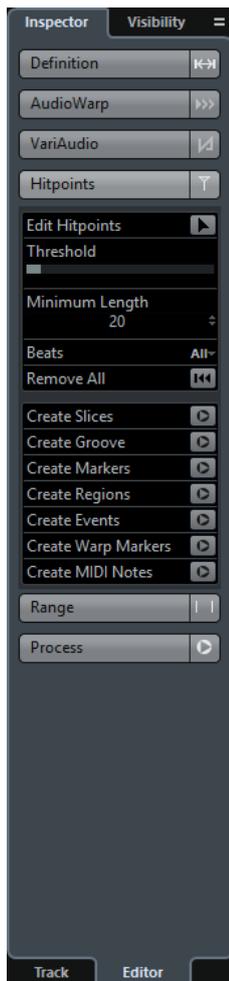
[Visibility](#) on page 62

Inspector

The **Inspector** allows you to show controls and parameters for either the selected track in the track list or the event or part that is shown in the editor in the lower zone.

If the **Inspector** tab is activated at the top of the left zone, the bottom of the left zone features two tabs: **Track** and **Editor**.

- Click the **Track** tab to open the **Track Inspector** for the selected track.
- Click the **Editor** tab to open the **Editor Inspector** for the event or part that is shown in the editor in the lower zone.



RELATED LINKS

[Opening the Track Inspector](#) on page 57

[Opening the Editor Inspector](#) on page 58

[Opening the Editor in the Lower Zone](#) on page 69

Opening the Track Inspector

The **Track Inspector** shows controls and parameters for the selected track in the track list.

PROCEDURE

1. Click **Show/Hide Left Zone**  on the **Project** window toolbar to activate the **Left Zone**.
2. At the bottom of the left zone, click the **Track** tab.



RESULT

The **Track Inspector** for the selected track in the track list is opened. If more than one track is selected, the controls and parameters for the topmost selected track are shown.

Opening the Editor Inspector

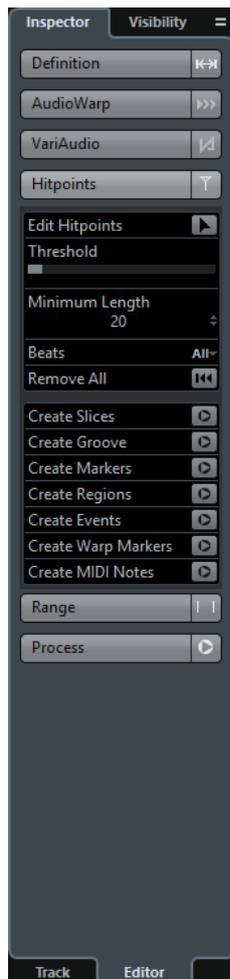
The **Editor Inspector** shows controls and parameters for the event or part that is shown in the editor in the lower zone.

PREREQUISITE

The **Sample Editor**, the **Key Editor**, the **Drum Editor** or the **Score Editor** is shown in the lower zone.

PROCEDURE

1. Click **Show/Hide Left Zone**  on the **Project** window toolbar to activate the **Left Zone**.
2. At the bottom of the left zone, click the **Editor** tab.



RESULT

The **Editor Inspector** for the event or part that is shown in the editor in the lower zone is opened.

NOTE

The **Editor Inspector** only contains information if the lower zone shows an editor. Otherwise, it is empty.

RELATED LINKS

[Opening the Editor in the Lower Zone](#) on page 69

Selecting a different Inspector for the Score Editor (Cubase Pro only)

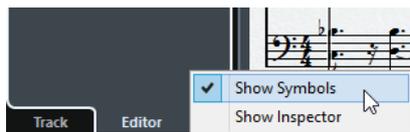
The **Score Editor Inspector** allows you to select the following tabs: **Inspector** and **Symbols**.

PREREQUISITE

The **Score Editor** is shown in the lower zone.

PROCEDURE

1. At the bottom of the left zone, click the **Editor** tab.
2. Select an option from the **Switch Score Editor Inspector Content** pop-up menu.



RESULT

The selected **Inspector** is shown.

RELATED LINKS

[Key Editor Inspector](#) on page 687

[The Symbols Inspector](#) on page 1125

Inspector Sections

The **Track Inspector** and the **Editor Inspector** are divided into a number of sections that each contain different controls for the track, event or part.

Not all **Inspector** sections are shown by default. The available sections depend on the type of the selected track, event, or part, and on the settings in the setup dialog for the **Track Inspector/Editor Inspector**.

- To open/close sections, click their names.
Opening one section closes the other sections.
- To open a section without closing the other sections, **Ctrl/Cmd**-click the section name.

RELATED LINKS

[Inspector Settings Dialog](#) on page 60

[Audio Track Inspector](#) on page 101

[Instrument Track Inspector](#) on page 108

[MIDI Track Inspector](#) on page 115

[Sampler Track Inspector](#) on page 122

[Arranger Track Inspector](#) on page 129

[Marker Track Inspector](#) on page 146

[Signature Track Inspector](#) on page 148

[Tempo Track Inspector](#) on page 149

[Transpose Track Inspector](#) on page 150

[VCA Fader Track Inspector](#) on page 151

[Video Track Inspector](#) on page 153

[Key Editor Inspector](#) on page 687

[Drum Editor Inspector](#) on page 730

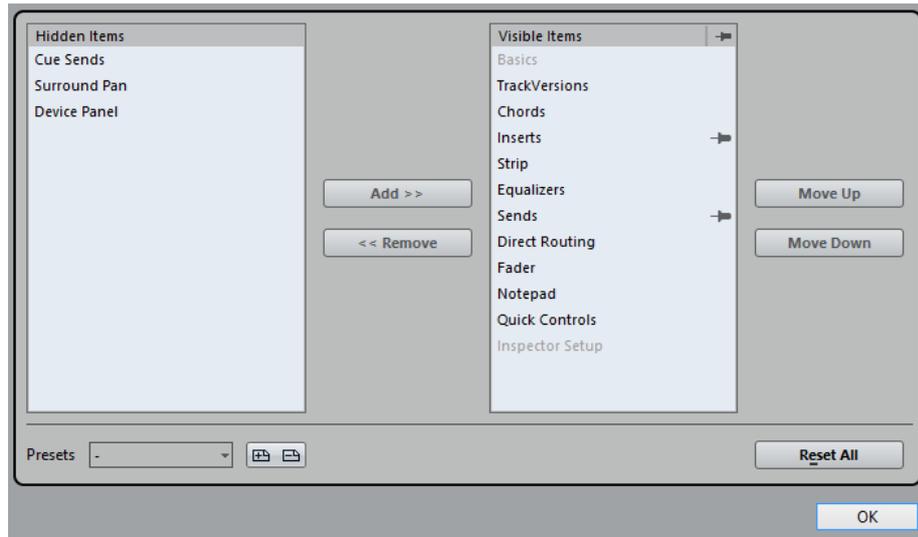
[The Symbols Inspector](#) on page 1125

[Sample Editor Inspector](#) on page 436

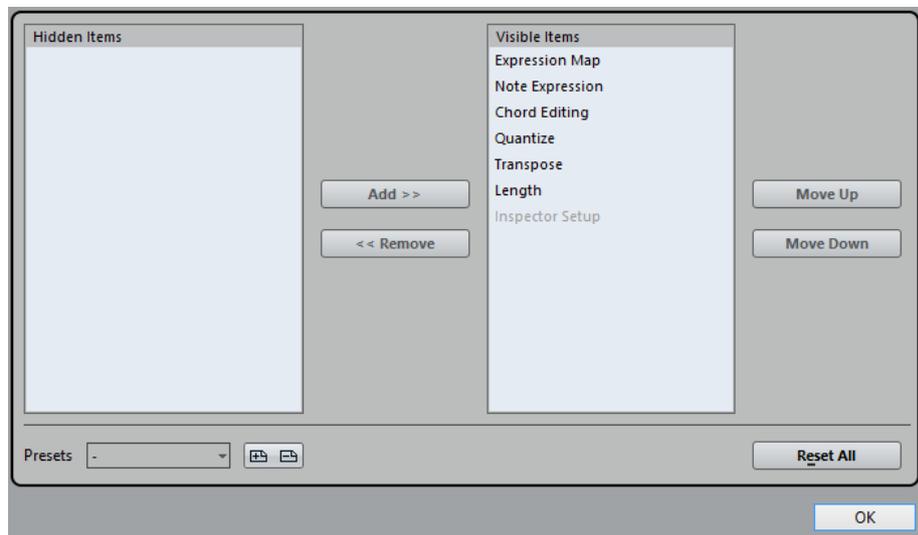
Inspector Settings Dialog

The **Inspector** settings dialogs allow you to set up the sections that are available in the **Track Inspector** and the **Editor Inspector**.

- To open the **Track Inspector Settings** dialog, click **Setup Inspector**  in the **Track Inspector**, and from the pop-up menu select **Setup**.



- To open the **Editor Inspector Settings** dialog, click **Setup Inspector**  in the **Editor Inspector**, and from the pop-up menu select **Setup**.



Hidden Items

Displays sections that are hidden in the **Inspector**.

Visible Items

Displays sections that are visible in the **Inspector**.

Pin

If you activate **Pin** by clicking the column for a section the open/close status of the selected **Inspector** section is pinned.

Add

Allows you to move an item selected in the hidden sections list to the list of visible sections.

Remove

Allows you to move an item selected in the visible sections list to the list of hidden sections.

Move Up/Move Down

Allows you to change the order of an item in the list of visible sections.

Presets

Allows you to save **Inspector** section settings as presets.

Reset All

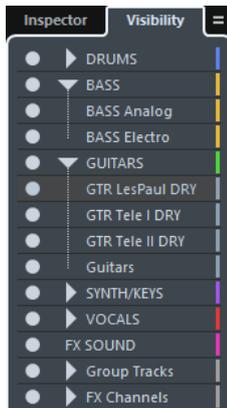
Allows you to restore the default **Inspector** section settings.

Visibility

The **Visibility Inspector** allows you to show or hide individual tracks from the track list and to determine the position of certain channels in the lower zone **MixConsole**.

If the **Visibility** tab is activated at the top of the left zone, the bottom of the left zone features two tabs: **Track** and **Zones**.

- Activate the **Track** tab to open the **Track Visibility** that allows you to show or hide individual tracks from the track list.
- Activate the **Zones** tab to open the **Zones Visibility** that allows you to determine and lock the position of certain channels in the lower zone **MixConsole**.

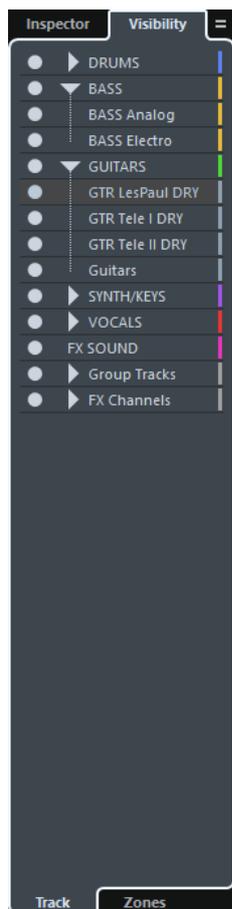


Opening the Track Visibility

The **Track Visibility** allows you to show or hide individual tracks from the track list.

PROCEDURE

1. Click **Show/Hide Left Zone** on the **Project** window toolbar to activate the **Left Zone**.
2. At the top of the left zone, click the **Visibility** tab.
3. At the bottom of the left zone, click the **Track** tab.



RESULT

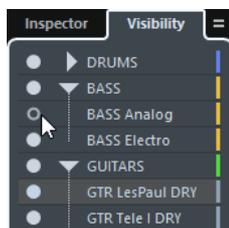
The **Track Visibility** for your project is shown.

RELATED LINKS

[Showing/Hiding Individual Tracks](#) on page 63

Showing/Hiding Individual Tracks

The **Track Visibility** shows a list of all tracks of your project. This list allows you to show and hide individual tracks.



- To show or hide a track in the track list, click the dot to the left of the track name.
- To activate or deactivate several tracks at the same time, select them and press **Return**.
- To show a hidden track exclusively, **Shift-click** the dot.
- To expand or collapse a folder, click the triangle to the left of a folder track.

NOTE

- The channels of the **MixConsole** in the lower zone are updated accordingly. This means that if you hide a track with the **Track Visibility**, the channel corresponding to that track is also hidden in the lower zone **MixConsole**.
- If you want to synchronize the track and the channel visibility in a separate **MixConsole** window, you must use the **Sync Track/Channel Visibility** function.

RELATED LINKS

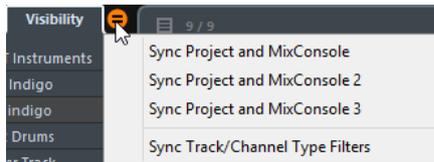
[Synchronizing Track and Channel Visibility](#) on page 64

Synchronizing Track and Channel Visibility

You can synchronize the track visibility in the **Project** window with the channel visibility in a separate **MixConsole** window.

PROCEDURE

1. At the bottom of the left zone, open the **Visibility** tab.
2. At the bottom of the left zone, open the **Track** tab.
3. Click the equals sign to open the **Sync Visibility of Project and MixConsole: On/Off** menu.



4. Select **Sync Project and MixConsole** to synchronize the track visibility with the channel visibility.

RESULT

The track and channel visibility are synchronized.

NOTE

- You can only synchronize the track visibility in the **Project** window with the channel visibility of one **MixConsole**. If you enable **Sync Visibility of Project and MixConsole: On/Off** for a second **MixConsole**, the first link is lost.
- If you divide the track list, the top part of the list is not affected. Likewise, channels in the left or right zones of the **MixConsole** are not synchronized.

RELATED LINKS

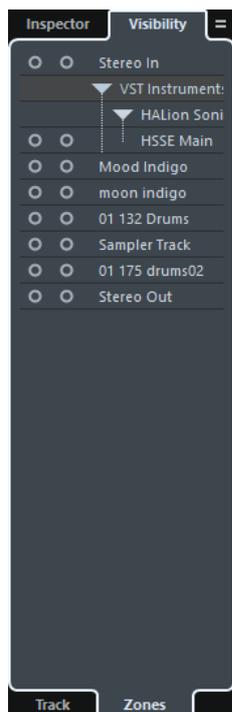
[Synchronizing Channel and Track Visibility](#) on page 302

Opening the Zones Visibility

The **Zones Visibility** allows to determine and lock the position of certain channels in the lower zone **MixConsole**.

PROCEDURE

1. At the top of the left zone, click the **Visibility** tab.
2. At the bottom of the left zone, click the **Zones** tab.



RESULT

The **MixConsole** is opened in the lower zone, and the **Zones Visibility** for the lower zone **MixConsole** is shown in the left zone.

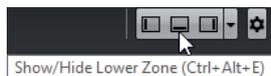
RELATED LINKS

[Opening the Lower Zone MixConsole](#) on page 67

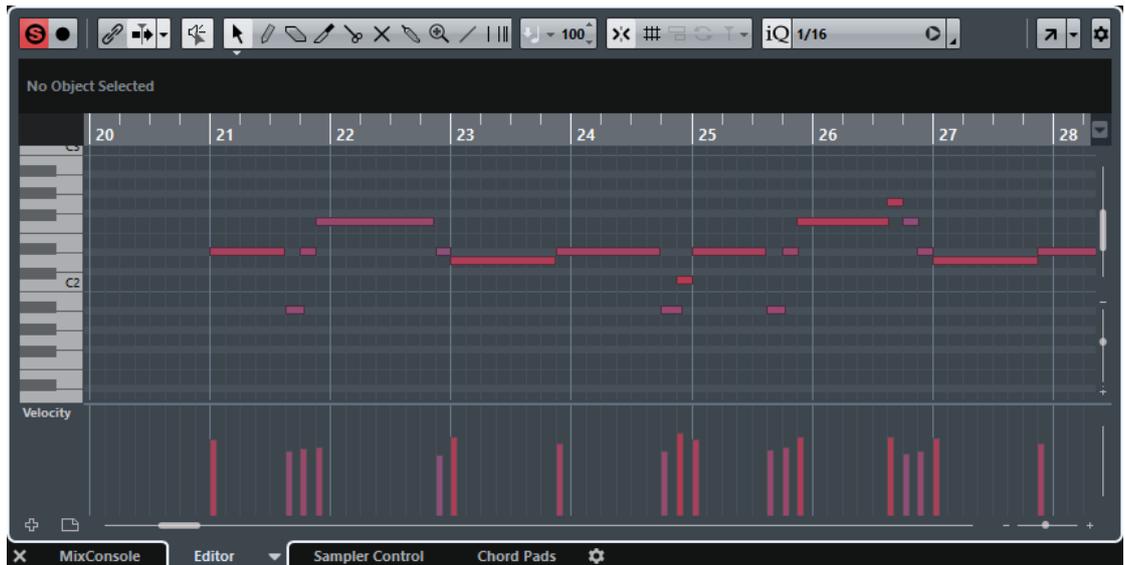
Lower Zone

The lower zone of the **Project** window allows you to display specific windows and editors in an integrated and fixed zone of the **Project** window. This is useful if you work on single screen systems and notebooks, for example.

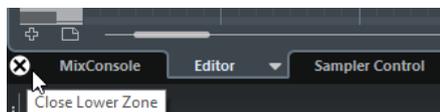
To show/hide the lower zone, click **Show/Hide Lower Zone** on the **Project** window toolbar.



The lower zone features the following tabs: **Chord Pads**, **MixConsole**, **Sampler Control**, and **Editor**.



To close the lower zone, click **Close Lower Zone** to the left of the tabs.



RELATED LINKS

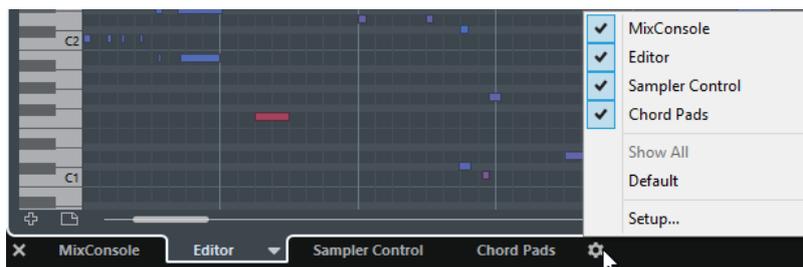
- [Opening Chord Pads on page 67](#)
- [Opening the Lower Zone MixConsole on page 67](#)
- [Opening Sampler Control on page 68](#)
- [Opening the Editor in the Lower Zone on page 69](#)

Setting up the Lower Zone

In the lower zone, the tabs **MixConsole**, **Editor**, **Sampler Control**, and **Chord Tabs** are shown. You can change the order of these tabs, and you can hide tabs that you do not need.

PROCEDURE

1. Click **Set up Lower Zone** in the bottom right of the lower zone.



2. Do one of the following:
 - Activate/Deactivate the options in the pop-up menu to show/hide tabs from the lower zone.
 - Select **Setup** to open a dialog where you can activate/deactivate the tabs and change their position.

NOTE

In the **Presets** section of this dialog you can also save a preset of your tab configuration.

RESULT

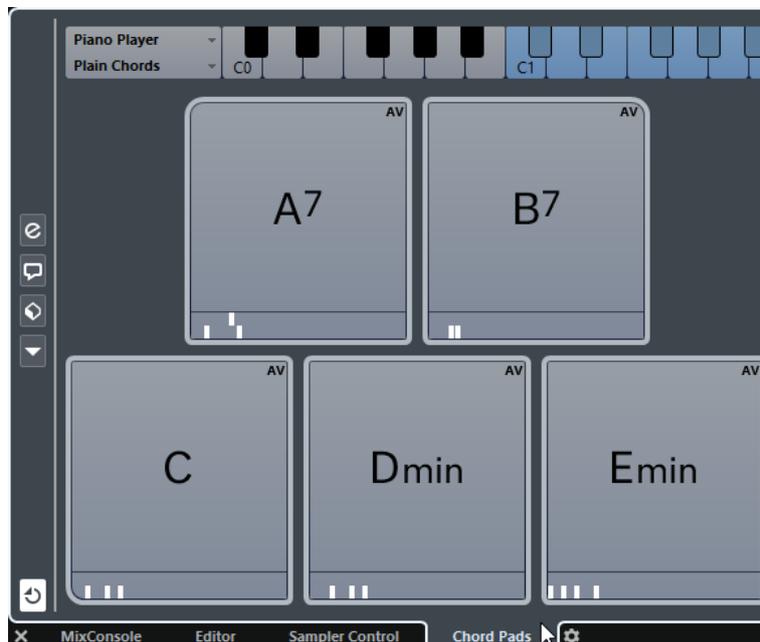
The tabs in the lower zone are shown according to your configuration.

Opening Chord Pads

Chord Pads allow you to play with chords, and to change their voicings and tensions.

PROCEDURE

1. Click **Show/Hide Lower Zone**  on the **Project** window toolbar to activate the lower zone.
2. At the bottom of the lower zone, click the **Chord Pads** tab.



RESULT

The **Chord Pads** are opened.

RELATED LINKS

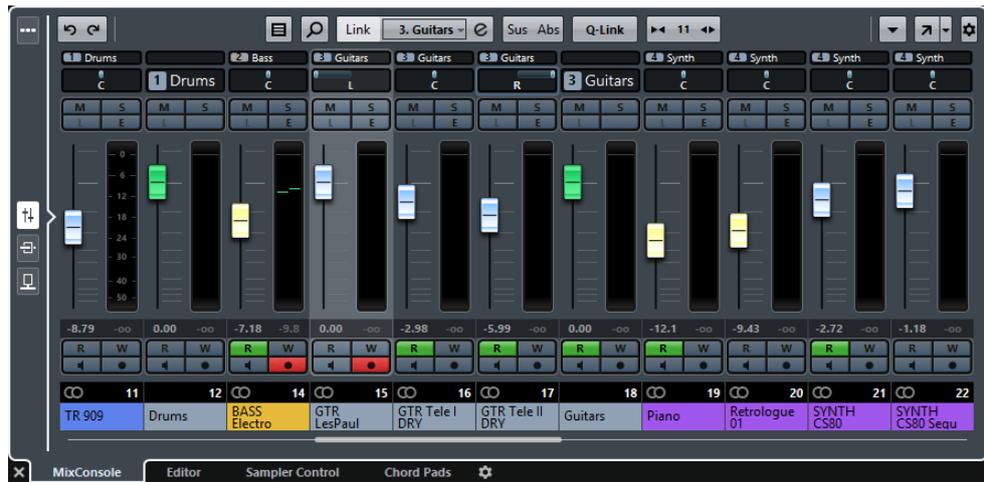
[Chord Pads](#) on page 807

Opening the Lower Zone MixConsole

The **MixConsole** in the lower zone allows you to perform all basic mixing procedures from within the lower zone of the **Project** window, and at the same time to see the context of your tracks and events.

PROCEDURE

1. Click **Show/Hide Lower Zone**  on the **Project** window toolbar to activate the lower zone.
2. At the bottom of the lower zone, click the **MixConsole** tab.



RESULT

The **MixConsole** is opened in the lower zone.

RELATED LINKS

[MixConsole in Lower Zone](#) on page 295

Opening Sampler Control

Sampler Control allows you display and edit the waveform of an audio sample on a sampler track.

PROCEDURE

1. Click **Show/Hide Lower Zone**  on the **Project** window toolbar to activate the lower zone.
2. At the bottom of the lower zone, click the **Sampler Control** tab.



RESULT

Sampler Control is opened.

RELATED LINKS

[Controlling Sample Playback with Sampler Tracks](#) on page 498

Opening the Editor in the Lower Zone

The **Editor** in the lower zone allows you to perform event editing procedures from within the lower zone of the **Project** window, and at the same time to see the context of your tracks and events.

NOTE

By default, double-clicking an audio event/part or a MIDI part in the event display or selecting it and pressing **Return** opens the corresponding editor in the lower zone of the **Project** window. Using a menu command opens a separate editor window. You can change this in the **Preferences** dialog (**Editors** page).

PROCEDURE

1. Click **Show/Hide Lower Zone**  on the **Project** window toolbar to activate the lower zone.
2. At the bottom of the lower zone, click the **Editor** tab.
3. In the event display, do the following:
 - Select a MIDI part.
 - Select an audio event.
 - Select an audio part.



RESULT

Depending on your event or part selection the lower zone shows either the **Audio Part Editor**, the **Sample Editor** or one of the MIDI Editors.

NOTE

To change the default MIDI editor, select **MIDI > Set up Editor Preferences**, and select an option from the **Default MIDI Editor** pop-up menu.

NOTE

If you open the editor and no event or part is selected, the editor in the lower zone is empty.

RELATED LINKS

[Selecting a different MIDI Editor](#) on page 70

Selecting a different MIDI Editor

You can display the MIDI part that is opened in the editor in the lower zone in a different MIDI editor. To do this, you do not necessarily need to change the default MIDI editor.

PROCEDURE

1. On the **Editor** tab in the editor in the lower zone, click **Select MIDI Editor**.
2. Select an editor from the pop-up menu.



RESULT

The MIDI part is displayed in the selected editor.

NOTE

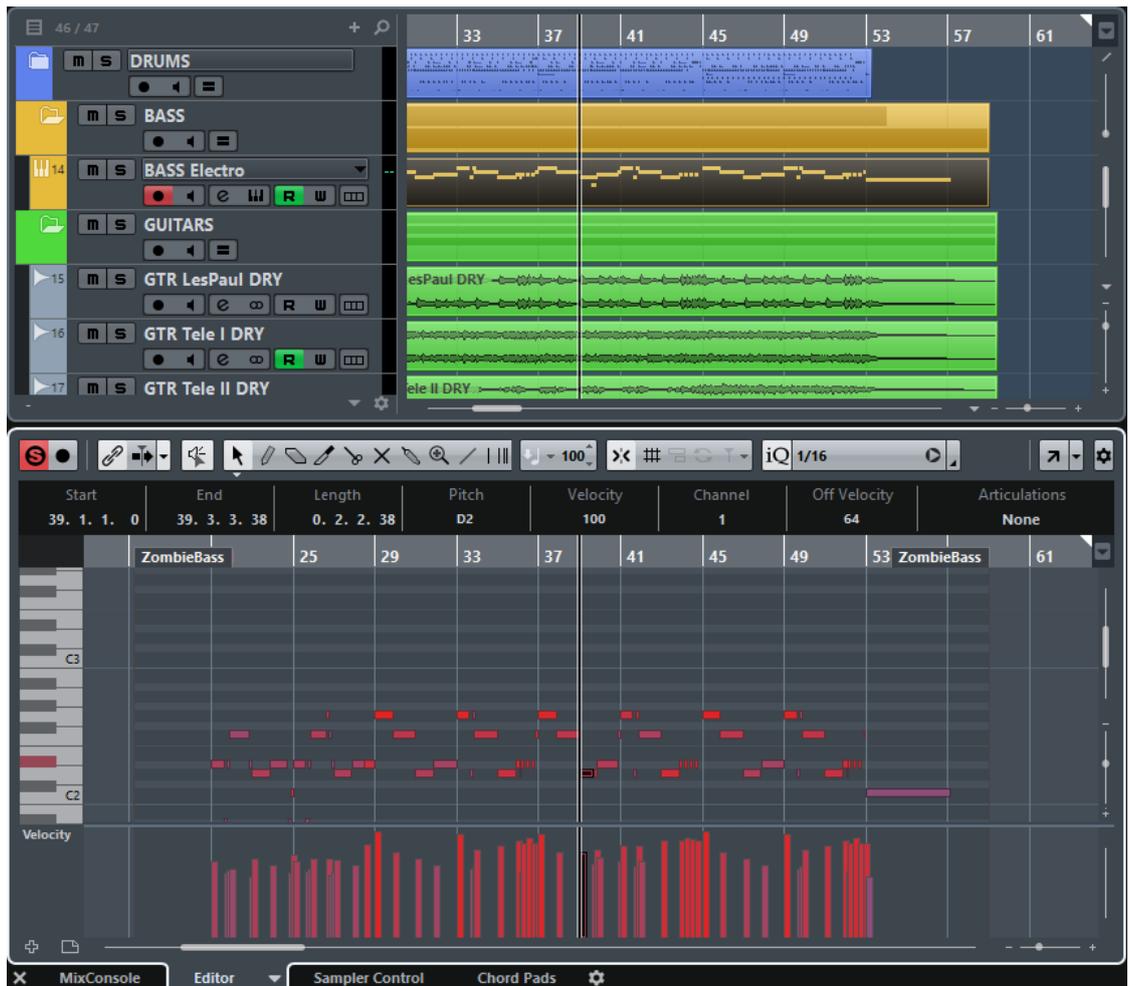
This selection is temporary. Next time you open the MIDI part, the default MIDI editor is used.

Link Project and Lower Zone Editor Cursors

You can link cursors and zoom factors of the project zone and the **Key Editor**, **Drum Editor**, and the **Audio Part Editor** in the lower zone.

NOTE

The ruler display format setting is not affected by this function. You can still select different ruler display formats for the project zone and the editor in the lower zone.



If you activate **Link Project and Lower Zone Editor Cursors**, the cursors and zoom factors are linked in the event displays of the project zone and the lower zone. This is useful if you edit in both zones and you want to keep the same position in view.

NOTE

In the **Key Commands** dialog in the **Edit** category, you can assign a key command for this.

RELATED LINKS

[Ruler](#) on page 50

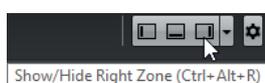
[Ruler Display Formats](#) on page 51

[Zooming in the Project Window](#) on page 77

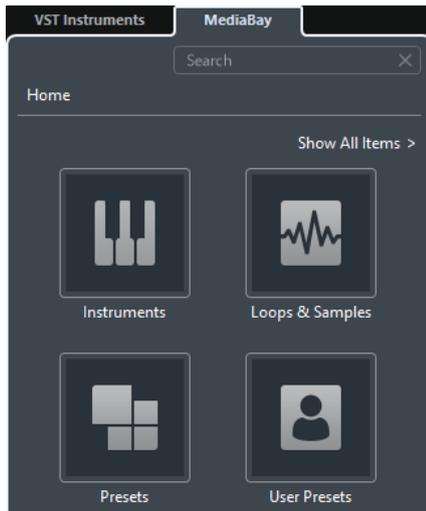
Right Zone

The right zone of the **Project** window allows you to display the **VST Instruments** rack and the **MediaBay** rack.

To show/hide the right zone, click **Show/Hide Right Zone** on the **Project** window toolbar.



The top of the right zone features two tabs: **VST Instruments** and **MediaBay**.



RELATED LINKS

[VST Instruments in the Right Zone](#) on page 72

[MediaBay in the Right Zone](#) on page 75

Opening the VST Instruments in the Right Zone

You can show **VST Instruments** in the right zone of the **Project** window. This allows you to add and edit **VST instruments**, and at the same time to see the context of your tracks and events.

PROCEDURE

1. Click **Show/Hide Right Zone**  on the **Project** window toolbar to activate the **Right Zone**.
2. At the top of the right zone, click the **VST Instruments** tab.



RESULT

The **VST Instruments** are opened in the right zone of the **Project** window.

RELATED LINKS

[VST Instruments in the Right Zone](#) on page 72

[VST Instruments](#) on page 598

VST Instruments in the Right Zone

The **VST Instruments** in the right zone of the **Project** window allow you to add and edit **VST instruments** in the context of the **Project** window.

The following sections are available:



- **Track**
Shows the associated VST Instrument for an instrument track.
- **Rack**
Shows a VST instrument.

The following controls are available:



1. **Add Track Instrument**
Opens the **Add Instrument Track** dialog that allows you to select an instrument and add an instrument track that is associated to this instrument.
2. **Find Instruments**
Opens a selector that allows you to find a loaded instrument.
3. **Set Remote-Control Focus for VST Quick Controls to Previous/Next Instrument**
Allows you to set the remote-control focus to the next/previous instrument.
4. **Show/Hide all VST Quick Controls**
Shows/Hides the default quick controls for all loaded instruments.
5. **Settings**
Opens the **Settings** menu where you can activate/deactivate the following modes:
 - **Show VST Quick Controls for One Slot Only** shows the VST Quick Controls exclusively for the selected instrument.
 - **MIDI Channel follows track selection** ensures that the **Channel** selector follows the MIDI track selection in the **Project** window. Use this mode if you work with multitimbral instruments.
 - **Remote-Control Focus for VST Quick Controls follows track selection** ensures that the VST Quick Control remote-control focus follows the track selection.

RELATED LINKS

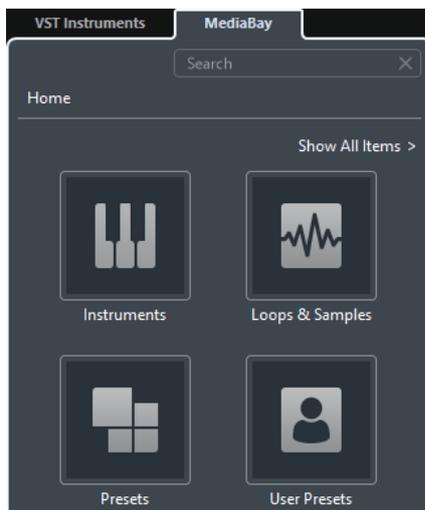
[VST Instruments Window](#) on page 600

Opening the MediaBay in the Right Zone

You can show the **MediaBay** in the right zone of the **Project** window. This allows you to see the context of your tracks and events when you drag audio events, MIDI parts, or instrument presets into the event display.

PROCEDURE

1. Click **Show/Hide Right Zone**  on the **Project** window toolbar to activate the **Right Zone**.
2. At the top of the right zone, click the **MediaBay** tab.



RESULT

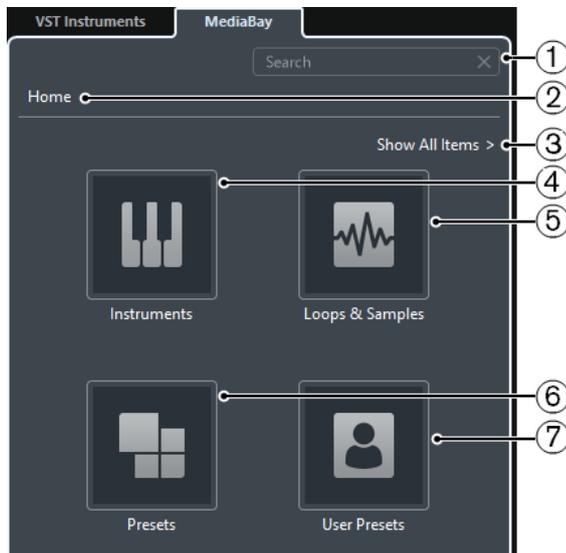
The **MediaBay** is opened in the right zone of the **Project** window.

RELATED LINKS

- [MediaBay in the Right Zone on page 75](#)
- [MediaBay on page 530](#)

MediaBay in the Right Zone

The **MediaBay** in the right zone of the **Project** window allows you to drag audio events, MIDI parts or instrument presets from into the event display. It lists Steinberg factory content and any installed Steinberg content sets.



The **MediaBay** is divided into several sections:

- 1. Search**
Allows you to search media files by name or by attribute.
- 2. Home**
Allows you to go back to the initial tiles view.
- 3. Show All Items**
Allows you to show the results list for the selected tile. If no tile is selected, all media files that are contained in the selected **Browse Location** are shown.
- 4. Instruments Tile**
Click this tile to show the presets for the included VST instruments.
- 5. Loops & Samples Tile**
Click this tile to show audio loops, MIDI loops or instrument sounds ordered by content set.
- 6. Presets Tile**
Click this tile to show the track presets, strip presets, pattern banks, FX chain presets, and VST FX presets.
- 7. User Presets Tile**
Click this tile to show the track presets, strip presets, pattern banks, FX chain presets, VST FX presets, and instrument presets that are listed in the folder **VST Sound > User Content**.

RELATED LINKS

[Locations Section](#) on page 534

[MediaBay in Right Zone](#) on page 530

[MediaBay](#) on page 530

Keyboard Focus in the Project Window

The different zones in the **Project** window can be controlled by using key commands. To make sure that a key command has effect on a specific zone, you must make sure that this zone has the keyboard focus.

The following **Project** window zones can have the keyboard focus:

- Project zone
- Left zone
- Lower zone
- Right zone

If a zone has the keyboard focus, the border that surrounds it is highlighted in a specific color.

NOTE

You can change the focus zone border color in the **Preferences** dialog (**Appearance-Colors-General** page).

RELATED LINKS

- [Project Zone](#) on page 43
- [Left Zone](#) on page 55
- [Lower Zone](#) on page 65
- [Right Zone](#) on page 71
- [Project Window](#) on page 42

Activating Keyboard Focus for a Zone

You can activate the keyboard focus for a zone by clicking with the mouse and by using key commands.

PROCEDURE

- Do one of the following:
 - To activate any zone, click in it.
 - To activate the next zone, press **Tab**. This allows you to cycle forward through the zones.
 - To activate the previous zone, press **Shift-Tab**.

NOTE

The editor in the lower zone automatically gets the keyboard focus if you double-click an event or part in the event display, if you select an event or part and press **Return**, or if you use key commands to open the zone.

RESULT

The keyboard focus is activated for this zone and the border of the zone is highlighted.

NOTE

The project zone and the lower zone have separate toolbars and info lines. If you use the toolbar or the info line for one of these zones, the corresponding zone automatically gets the focus.

RELATED LINKS

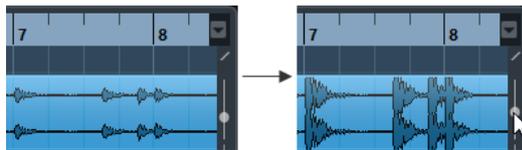
- [Appearance-Colors](#) on page 979

Zooming in the Project Window

You can zoom in the **Project** window according to the standard zoom techniques.

Note the following:

- When you are using the **Zoom** tool (magnifying glass), the zooming result depends on the **Zoom Tool Standard Mode: Horizontal Zooming Only** option. To access this option, open the **Preferences** dialog and select **Editing > Tools**.
If this option is activated and you drag a selection rectangle with the **Zoom** tool, the window is only zoomed horizontally, the track height does not change. If the option is deactivated, the window is zoomed both horizontally and vertically.
- When you are using the vertical zoom sliders, the tracks are scaled relatively.
If you have made any individual track height adjustments, the relative height differences are maintained.
- If the **Zoom while Locating in Time Scale** option is activated, you can also zoom by clicking in the lower half of the ruler and dragging up or down with the left mouse button pressed. To access this option, open the **Preferences** dialog and select **Transport**.
Drag up to zoom out; drag down to zoom in.
- To zoom in on the contents of parts and events vertically, use the waveform zoom slider in the top right corner of the event display.
This is useful when viewing quiet audio passages.



IMPORTANT

To get an approximate reading on the level of the audio events by viewing the waveforms, make sure this slider is all the way down. Otherwise, zoomed waveforms may be mistaken for clipped audio.

- If the **Quick Zoom** option is activated, the contents of parts and events are not continuously redrawn when you zoom manually. Instead, the contents are redrawn once you have stopped changing the zoom. Activate the **Quick Zoom** option if screen redraws are slow on your system. To access this option, open the **Preferences** dialog and select **Editing**.

NOTE

You can link the project cursor and zoom with the editor in the lower zone.

RELATED LINKS

[Link Project and Lower Zone Editor Cursors](#) on page 70

Zoom Submenu

The **Zoom** submenu contains options for zooming in the **Project** window.

- To open the **Zoom** submenu, select **Edit > Zoom**.

The following options are available:

Zoom In/Out

Zooms in/out one step, centering on the project cursor.

Zoom Full

Zooms out so that the whole project is visible. The whole project means the timeline from the project start to the length set in the **Project Setup** dialog.

Zoom to Selection

Zooms in horizontally and vertically so that the current selection fills the screen.

Zoom to Selection (Horiz.)

Zooms in horizontally so that the current selection fills the screen.

Zoom to Event

This option is available in the **Sample Editor** and in some MIDI editors.

Zoom In/Out Vertically

Zooms in/out one step vertically.

Zoom In/Out Tracks

Zooms the selected tracks in/out one step vertically.

Zoom Selected Tracks

This zooms in vertically on the selected tracks and minimizes the height of all other tracks.

Undo/Redo Zoom

These options allow you to undo/redo the last zoom operation.

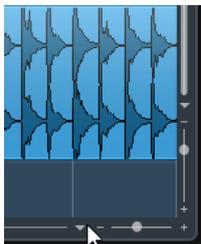
RELATED LINKS

[Zoom Submenu](#) on page 440

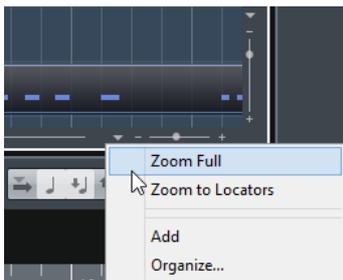
Zoom Presets

You can create zoom presets that allow you to set up different zoom settings. For example, one where the whole project is displayed in the **Project** window and another with a high zoom factor for detailed editing. The **Zoom Presets** pop-up menu allows you to select, create, and organize zoom presets.

- To open the **Zoom Presets** pop-up menu, click the button to the left of the horizontal zoom control.



The upper part of the menu lists the zoom presets.



- To save the current zoom setting as a preset, open the **Zoom Presets** pop-up menu and select **Add**. In the **Type In Preset Name** dialog that opens, type in a name for the preset and click **OK**.
- To select and apply a preset, select it from the **Zoom Presets** pop-up menu.
- To zoom out so that the whole project is visible, open the **Zoom Presets** pop-up menu and select **Zoom Full**.
This displays the project from the project start to the length that is set in the **Project Setup** dialog.
- To delete a preset, open the **Zoom Presets** pop-up menu and select **Organize**. In the dialog that opens, select the preset in the list and click **Delete**.
- To rename a preset, open the **Zoom Presets** pop-up menu and select **Organize**. In the dialog that opens, select a preset in the list and click **Rename**. In the dialog that opens, type in a new name for the preset. Click **OK** to close the dialogs.

IMPORTANT

Zoom presets are global for all projects. They are available in all projects that you open or create.

Zooming In On Cycle Markers

You can zoom in on the area between cycle markers in the project.

- To zoom in on a cycle marker, click the button to the left of the horizontal zoom control to open the **Zoom Presets** pop-up menu and select a cycle marker.



The middle part of the **Zoom Presets** pop-up menu lists any cycle markers that you have added to the project.

NOTE

Only the cycle markers that you create in the current project are available on the menu.

If you select a cycle marker, the event display is zoomed in to encompass the marker area.

You cannot edit the cycle markers in the **Zoom Presets** pop-up menu.

RELATED LINKS

[Markers Window](#) on page 286

Zoom History

You can undo and redo zoom operations. This way you can zoom in several steps and then easily go back to the zoom stage at which you started.

You can undo and redo zoom operations in the following ways:

- To undo zoom, select **Edit > Zoom > Undo Zoom** or double-click with the zoom tool (magnifying glass).
- To redo zoom, select **Edit > Zoom > Redo Zoom** or press **Alt** and double-click with the zoom tool (magnifying glass).

Snap Function

The **Snap** function helps you to find exact positions when editing in the **Project** window. It does this by restricting horizontal movement and positioning to certain positions. Operations affected by **Snap** include moving, copying, drawing, sizing, splitting, range selection, etc.

- To activate/deactivate **Snap**, activate/deactivate the **Snap** icon on the toolbar.



Setting the Snap Point

You can set the snap point at any position of the audio event.

PROCEDURE

1. Select an event.
2. Place the project cursor at a position within the selected audio event.
3. Select **Audio > Snap Point To Cursor**.

RESULT

The snap point is set at the cursor position. The snap point for an event is displayed as a vertical line in the **Project** window.



NOTE

You can also set the snap point in the **Sample Editor**.

RELATED LINKS

[Adjusting the Snap Point](#) on page 447

Snap to Zero Crossing

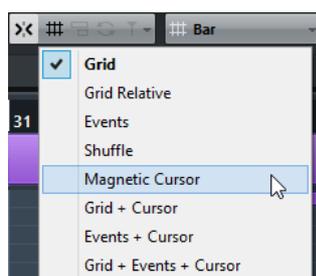
When splitting and sizing audio events, sudden amplitude changes can cause pops and clicks. To avoid this, you can activate **Snap to Zero Crossing** to snap to points where the amplitude is zero.

- To activate **Snap to Zero Crossing**, activate **Snap to Zero Crossing**  on the toolbar.

Snap Types

You can select between different snap types to determine the snap point.

- To select a snap type, open the **Snap Type** pop-up menu.

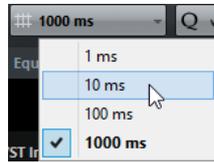


The following snap types are available:

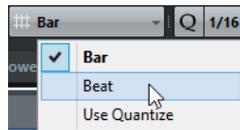
Grid

If this option is activated, the snap points are set with the **Grid Type** pop-up menu. The options depend on the display format that is selected for the ruler.

If you select **Seconds** as ruler format, time-based grid options are available.



If you select **Bars+Beats** as a ruler format, musical grid options are available.



Grid Relative

If this option is activated, events and parts are not magnetic to the grid. Rather, the grid determines the step size for moving the events. This means that a moved event keeps its original position relative to the grid.

For example, if an event starts at the position 3.04.01, snap is set to **Grid Relative** and the **Grid Type** pop-up menu is set to **Bar**, you can move the event in steps of one bar to the positions 4.04.01, 5.04.01, and so on.

NOTE

This only applies when dragging existing events or parts. When you create new events or parts this snap type works like **Grid**.

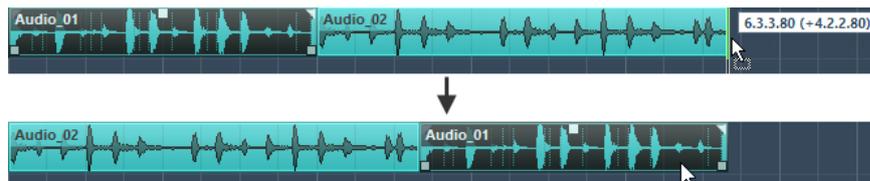
Events

If this option is activated, the start and end positions of other events and parts become magnetic. This means that if you drag an event to a position near the start or end of another event, it is automatically aligned with the start or end of the other event.

For audio events, the position of the snap point is also magnetic. This includes marker events on the marker track.

Shuffle

Shuffle is useful when you want to change the order of adjacent events. If you have two adjacent events and drag the first one to the right, past the second event, the two events will change places.



The same principle works when changing the order of more than two events:

1	2	3	4	5
---	---	---	---	---

Dragging event 2 past event 4...

1	3	4	2	5
---	---	---	---	---

...changes the order of events 2, 3, and 4.

Magnetic Cursor

This grid type lets the project cursor become magnetic. Dragging an event near the cursor causes the event to be aligned with the cursor position.

Grid + Cursor

This is a combination of **Grid** and **Magnetic Cursor**.

Events + Cursor

This is a combination of **Events** and **Magnetic Cursor**.

Events + Grid + Cursor

This is a combination of **Events**, **Grid**, and **Magnetic Cursor**.

Cross-Hair Cursor

The cross-hair cursor is displayed when working in the **Project** window and in the editors, facilitating navigation and editing, especially when arranging large projects.

- To set up the cross-hair cursor, open the **Preferences** dialog and select **Editing > Tools**. You can set up the colors for the line and the mask of the cross-hair cursor, and define its width.

The cross-hair cursor works as follows:

- When the **Object Selection** tool or one of its subtools is selected, the cross-hair cursor appears when you start moving/copying a part/event, or when using the event trim handles.



Cross-hair cursor when moving an event.

- When the **Object Selection** tool, the **Cut** tool, or any other tool that makes use of this function is selected, the cross-hair cursor appears as soon as you move the mouse over the event display.
- The cross-hair cursor is only available for tools where such a function is of any use. The **Mute** tool, for example, does not use a cross-hair cursor, as you have to click directly on an event to mute it.

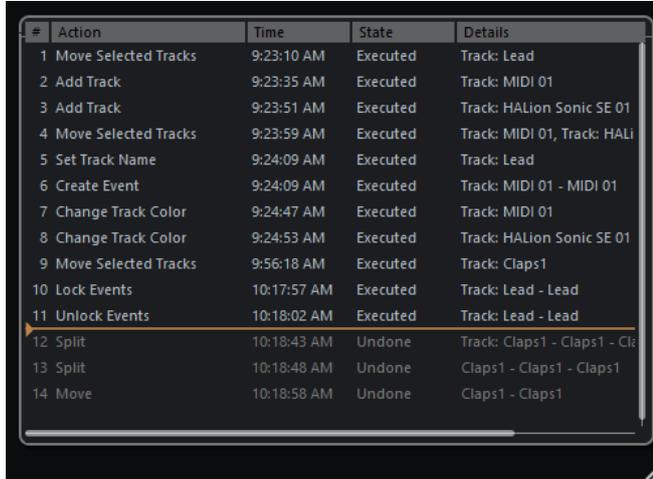
NOTE

If the **Key Editor**, **Drum Editor** or the **Audio Part Editor** is open in the lower zone of the **Project** window and **Link Project and Lower Zone Cursors** is activated, the cross-hair cursor is shown in the editor in the lower zone and in the **Project** window.

Edit History Dialog

The **Edit History** dialog contains a list of all your edits. This allows you to undo all actions in the **Project** window as well as in the editors.

- To open the **Edit History** dialog, select **Edit > History**.



#	Action	Time	State	Details
1	Move Selected Tracks	9:23:10 AM	Executed	Track: Lead
2	Add Track	9:23:35 AM	Executed	Track: MIDI 01
3	Add Track	9:23:51 AM	Executed	Track: HALion Sonic SE 01
4	Move Selected Tracks	9:23:59 AM	Executed	Track: MIDI 01, Track: HALi
5	Set Track Name	9:24:09 AM	Executed	Track: Lead
6	Create Event	9:24:09 AM	Executed	Track: MIDI 01 - MIDI 01
7	Change Track Color	9:24:47 AM	Executed	Track: MIDI 01
8	Change Track Color	9:24:53 AM	Executed	Track: HALion Sonic SE 01
9	Move Selected Tracks	9:56:18 AM	Executed	Track: Claps1
10	Lock Events	10:17:57 AM	Executed	Track: Lead - Lead
11	Unlock Events	10:18:02 AM	Executed	Track: Lead - Lead
12	Split	10:18:43 AM	Undone	Track: Claps1 - Claps1 - Cl
13	Split	10:18:48 AM	Undone	Claps1 - Claps1 - Claps1
14	Move	10:18:58 AM	Undone	Claps1 - Claps1

The **Action** column displays the name of the action while the **Time** column tells you when this action was performed. In the **Details** column further details are shown. Here you can enter new text by double-clicking in the column.

- To undo your actions, move the horizontal, colored line upwards to the desired position. You can only undo your actions in reverse order, for example, the last performed action is the first action to be undone.
- To redo an action that was undone previously, move the line down the list again.

NOTE

You can also undo audio processes or applied plug-in effects. However, we recommend to remove and modify these using the **Offline Process History**.

RELATED LINKS

[Offline Process History](#) on page 410

Setting the Number of Maximum Undo Steps

You can limit the number of maximum undo steps. This is useful if you run out of memory, for example.

PROCEDURE

1. Open the **Preferences** dialog and select **General**.
 2. Set the number in the **Maximum Undo Steps** field.
-

Project Handling

In Cubase, projects are the central documents. You must create and set up a project to work with the program.

Creating New Projects

You can create empty projects or projects that are based on a template.

PROCEDURE

1. Select **File > New Project**.
Depending on your settings, either the **Hub** or the **Project Assistant** dialog opens.
2. In the location options section, select where to store the new project.
 - To use the default location, select **Use default location**.
 - To choose another location, select **Prompt for project location**.
3. Do one of the following:
 - To create an empty new project, click **Create Empty**.
 - To create a new project from a template, select a template and click **Create**.

RESULT

A new, untitled project is created. If you selected a template, the new project is based on this template and includes the corresponding tracks, events, and settings.

NOTE

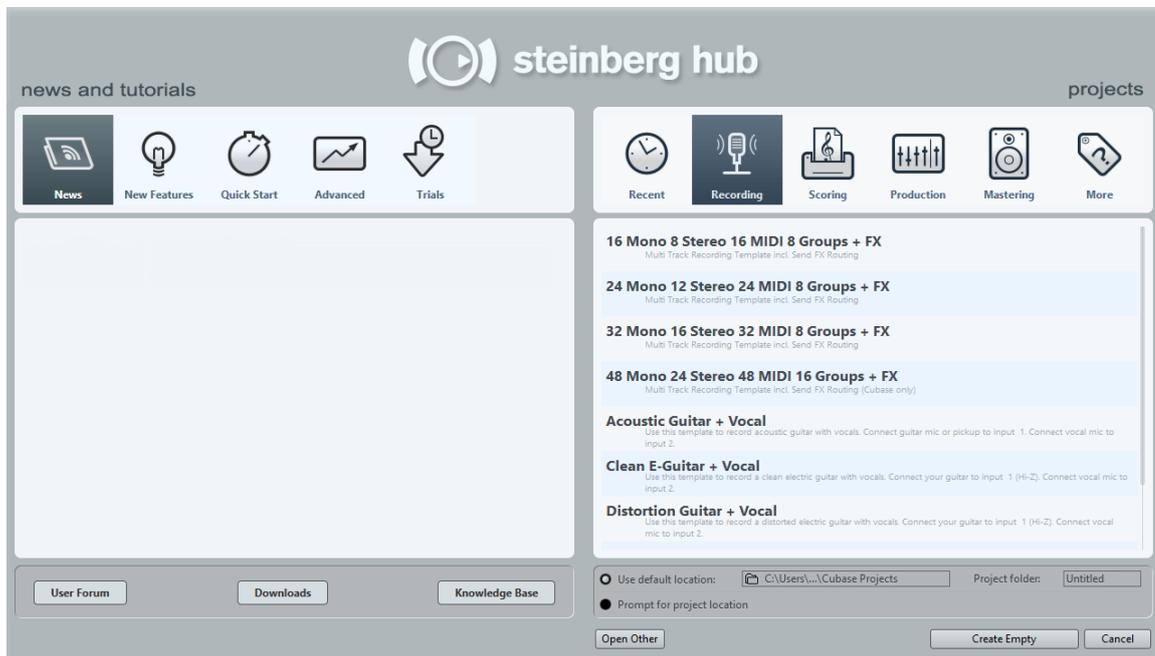
If you create an empty project, your default presets for the input and output bus configurations are applied. If you have not defined default presets, the last used configurations are applied.

RELATED LINKS

[Presets for Input and Output Busses](#) on page 32

Hub

When you start Cubase or create new projects using the **File** menu, the **Hub** opens. The **Hub** keeps you up to date with the latest information and assists you with organizing your projects. It consists of the **News and Tutorials** section and the **Projects** section.



News and Tutorials section

The **News and Tutorials** section displays Steinberg news, tutorial videos as well as links to the user forum, downloads, and Knowledge Base.

NOTE

Ensure that you have an active Internet connection to access this material.

Projects section

The **Projects** section lets you create new projects, which can either be empty or based on a template. It lets you specify where to save the projects. It also allows you to access recently opened projects or projects that are stored in other locations. This section offers the same functionality as the **Project Assistant** dialog.

Category bar

In this section, the available factory templates are sorted into the predefined categories **Recording**, **Scoring**, **Production**, and **Mastering**.

The **Recent** category contains a list of the recently opened projects.

The **More** category contains the default project template and all templates that are not assigned to any of the other categories.

Template list

When you click on one of the category items, the list below the category bar shows the available templates for this category. Any new templates that you create are added at the top of the corresponding list.

Location options

This section allows you to specify where the project is stored.

Open other

This button allows you to open any project file on your system. This is identical to using the **Open** command on the **File** menu.

RELATED LINKS

[Project Assistant](#) on page 86

Deactivating the Hub

To start Cubase or to create new projects without the **Hub**, you can deactivate it.

PROCEDURE

1. Open the **Preferences** dialog.
2. Select **General** and deactivate **Use Hub**.

RESULT

Cubase starts without opening a project and opens the **Project Assistant** dialog when you create a new project using the **File** menu. However, you can still open the **Hub** through the **Hub** menu.

Project Assistant

When you deactivate the **Hub** and create new projects, the **Project Assistant** dialog opens. This dialog offers the same functions as the **Projects** section in the **Hub**.

Category bar

In this section, the available factory templates are sorted into the predefined categories **Recording**, **Production**, **Scoring**, and **Mastering**.

The **Recent** category contains a list of the recently opened projects.

The **More** category contains the default project template and all templates that are not assigned to any of the other categories.

Template list

When you click on one of the category items, the list below the category bar shows the available factory templates for this category. Any new templates that you create are added at the top of the corresponding list.

Location options

This section allows you to specify where the project is stored.

Open other

This button allows you to open any project file on your system. This is identical to using the **Open** command from the **File** menu.

About Project Files

A project file (extension *.cpr) is the central document in Cubase. A project file contains references to media data that can be saved in the project folder.

NOTE

We recommend to save files only in the project folder, even though you can save them in any other location to which you have access.

The project folder contains the project file and the following folders that Cubase automatically creates when necessary:

- Audio
- Edits
- Images
- Track Pictures

About Template Files

Templates can be a good starting point for new projects. Templates are projects where you can save all settings that you regularly use, such as bus configurations, sample rates, record formats, basic track layouts, VSTi setups, drum map setups, etc.

The following template types are available from within the **Hub**:

- Factory templates for specific scenarios. These are listed in the **Recording, Scoring, Production, or Mastering** categories.
- The default template. This is listed in the **More** category.
- Any new user templates that you create and save. These are listed in the **More** category.

Template projects are not saved in project folders and therefore contain no subfolders and no media files.

- To open the location of a specific template, right-click a template in the template list and select **Show in Explorer** (Windows only) or **Reveal in Finder** (Mac OS only).

Saving a Project Template File

You can save the current project as a template. When you create a new project, you can select this template as a starting point for your new project.

PREREQUISITE

Remove all clips from the Pool before you save the project as a template. This ensures that references to media data from the original project folder are deleted.

PROCEDURE

1. Set up a project.
2. Select **File > Save as Template**.
3. In the **New Preset** section of the **Save as Template** dialog, enter a name for the new project template.



4. In the **Attribute Inspector** section, double-click the **Value** field of the **Content Summary** attribute to enter a description for the template.
 5. Click the **Value** field of the **Template Category** attribute and select a template category from the pop-up menu.
If you do not select a category, the new template will be listed in the **Hub** in the **More** category.
 6. Click **OK** to save the template.
-

Renaming Templates

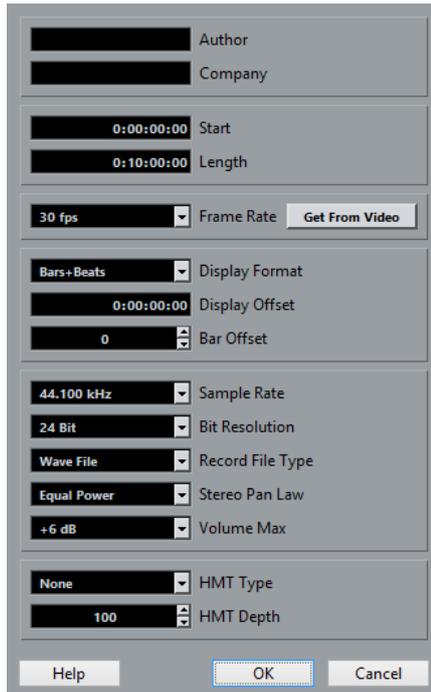
PROCEDURE

1. In the **Hub** or the **Project Assistant**, right-click a template and select **Rename**.
 2. In the **Rename** dialog, enter a new name and click **OK**.
-

Project Setup Dialog

You can perform general settings for your project in the **Project Setup** dialog.

- To open the **Project Setup** dialog, select **Project > Project Setup**.
- To open the **Project Setup** dialog automatically when you create a new project, open the **Preferences** dialog, select **General**, and activate the **Run Setup on Create New Project** option.



IMPORTANT

While most **Project Setup** settings can be changed at any time, you must set the sample rate directly after creating a new project. If you change the sample rate at a later stage, you must convert all audio files in the project to the new sample rate to make them play back properly.

The following options are available:

Author

Allows you to specify a project author that is written into the file, when you export audio files and activate the **Insert iXML chunk** option. You can specify a default author in the **Default Author Name** field. To access this, open the **Preferences** dialog and select **General > Personalization**.

Company

Allows you to specify a company name that is written into the file, when you export audio files and activate the **Insert iXML chunk** option. You can specify a default company in the **Default Company Name** field. To access this, open the **Preferences** dialog and select **General > Personalization**.

Start

Allows you to specify the start time of the project in timecode format. This also determines the sync start position when synchronizing to external devices.

Length

Allows you to specify the length of the project.

Frame Rate

Allows you to specify the timecode standard and frame rate for the project. When synchronizing to an external device, this setting must correspond to the frame rate of any incoming timecode.

Get From Video

Allows you to set the project frame rate to the frame rate of an imported video file.

Display Format

Allows you to specify the global display format that is used for all rulers and position displays in the program, except the ruler tracks. However, you can make independent display format selections for the individual rulers and displays.

Display Offset

Allows you to specify an offset for the time positions that are displayed in the rulers and position displays to compensate for the Start position setting.

Bar Offset

This setting is only used, when you select the Bars+Beats display format. Allows you to specify an offset for the time positions that are displayed in the rulers and position displays to compensate for the Start position setting.

Sample Rate

Allows you to specify the sample rate at which records and plays back audio.

- If your audio hardware generates the sample rate internally and you select a non-supported sample rate, this is indicated by a different color. In this case, you must set a different sample rate to make your audio files play back properly.
- If you select a sample rate that your audio hardware supports, but that differs from its current sample rate setting, it is automatically changed to the project sample rate.
- If your audio hardware is externally clocked and receives external clock signals, sample rate mismatches are accepted.

Bit Resolution

Allows you to specify the resolution of the audio files that you record in Cubase. Select the record format according to the bit resolution that is delivered by your audio hardware. The available options are 16 Bit, 24 Bit, and 32 Bit float.

NOTE

- When you record with effects, consider setting the bit resolution to 32 Bit Float. This prevents from clipping (digital distortion) in the recorded files and keeps the audio quality absolutely pristine. Effect processing and level or EQ changes in the input channel are done in 32 Bit Float format. If you record at 16 or 24 Bit, the audio will be converted to this lower resolution when it is written to a file. As a result, the signal may degrade. This is independent of the actual resolution of your audio hardware. Even if the signal from the audio hardware has a resolution of 16 Bit, the signal will be 32 Bit Float after the effects are added to the input channel.
- The higher the bit resolution, the larger the files and the more strain is put on the disk system. If this is an issue, you can lower the record format setting.

Record File Type

Allows you to specify the file type of the audio files that you record in Cubase. The following file types are available:

- **Wave files** are a common file format on the PC platform. For recordings larger than 4 GB, the EBU RIFF standard is used. If a FAT 32 disk is used (not recommended), audio files are split automatically.
- **Wave 64** is a proprietary format developed by Sonic Foundry Inc. Audio-wise it is identical to the Wave format, but the internal file structure allows for much larger file sizes as required by long live recordings.

- **Broadcast Wave Files** are, in terms of audio content, identical with regular Wave files, but with embedded text strings for supplying additional information about the file. To set these up, open the **Preferences** dialog and select **Record > Audio > Broadcast Wave**.
- **AIFF Files**, Audio Interchange File Format, is a defined standard by Apple Inc. and can be used on most computer platforms. AIFF files can contain embedded text strings. To set these up, open the **Preferences** dialog and select **Record > Audio > Broadcast Wave**.
- **FLAC Files**, Free Lossless Audio Codec, is an open source format. Audio files recorded in this format are typically 50 % to 60 % smaller than regular Wave files.

NOTE

If your recorded Wave file is larger than 4 GB you can save it as an RF64 file. Open the **Preferences** dialog, select **Record > Audio**, open the **When Recording Wave Files larger than 4 GB** pop-up menu, and activate **Use RF64 Format**. This way, you do not have to worry about the file size during recording. However, keep in mind that this format is not supported by all applications.

Stereo Pan Law

If you pan a channel left or right, the sum of the left and right side is higher (louder), than if this channel is panned center. These modes allow you to attenuate signals panned center. **0 dB** turns off constant-power panning. **Equal Power** means that the power of the signal remains the same regardless of the pan setting.

Volume Max

Allows you to specify the maximum fader level. By default, this is set to +12 dB. If you load projects that were created with Cubase versions older than 5.5, this value is set to the old default value of +6 dB.

HMT Type (MIDI only)

Allows you to specify a mode for Hermode tuning of MIDI notes.

HMT Depth (MIDI only)

Allows you to specify the overall degree of retuning.

Opening Project Files

You can open one or several saved project files at the same time.

IMPORTANT

If you open a project saved with a different program version that contains data for functions that are not available in your version, this data may be lost when you save the project with your version.

NOTE

- If you open an external project, the last used view that was saved on your computer is used. You can change this setting in the **Preferences** dialog on the **General** page.
- External projects are automatically connected to the input and output busses. If you open a project that was created on a computer with an ASIO port configuration different from the configuration of your computer, this can result in unwanted audio connections. You

can deactivate the automatic connection of input and output busses in the **Preferences** dialog on the **VST** page.

PROCEDURE

1. Select **File > Open**.
 2. In the file dialog that opens, select the project that you want to open and click **Open**.
 3. If there already is an open project, you are asked if you want to activate the new project. Do one of the following:
 - To activate the project, click **Activate**.
 - To open the project without activating it, click **No**.
This reduces load times for projects.
-

RELATED LINKS

[Workspaces for External Projects](#) on page 975

[Do not Connect Input/Output Busses When Loading External Projects](#) on page 1025

Activating Projects

If you have several projects opened at the same time in Cubase, only one project can be active. The active project is indicated by the lit **Activate Project** button in the upper left corner of the **Project** window. If you want to work on another project, you have to activate the other project.

PROCEDURE

- To activate a project, click **Activate Project** .
-

Opening Recent Projects

To open a recently opened project, do one of the following:

- In the category bar of the **Hub** or the **Project Assistant** dialog, click **Recent**, select a project from the projects list, and click **Open**.
- Select **File > Recent Projects** and select a recently opened project.

Re-Routing Missing Ports

If you open a Cubase project that was created on a different system with other audio hardware, Cubase tries to find matching audio inputs and outputs for the input/output busses. If Cubase cannot resolve all audio/MIDI inputs and outputs that are used in the project, the **Missing Ports** dialog opens.

This allows you to manually re-route any ports specified in the project to ports that are available in your system.

NOTE

To improve the search for matching audio inputs and outputs for the input/output busses, you should use descriptive, generic names for your input and output ports.

RELATED LINKS

[Renaming the Hardware Inputs and Outputs](#) on page 30

Saving Project Files

You can save the active project as a project file. To keep your projects as manageable as possible, make sure that you save project files and all related files in the respective project folders.

- To save the project and specify a file name and location, open the **File** menu and select **Save As**.
- To save the project with its current name and location, open the **File** menu and select **Save**.

About the Auto Save Option

Cubase can automatically save backup copies of all open project files with unsaved changes.

NOTE

Only the project files are backed up. If you want to include the files from the Pool and save your project in a different location, you must use the **Back up Project** function.

Cubase can automatically save backup copies of all open projects with unsaved changes. To set this up, open the **Preferences** dialog, select **General**, and activate the **Auto Save** option. The backup copies are named "<project name>-xx.bak" where xx is an incremental number. Unsaved projects are backed up in a similar way as "UntitledX-xx.bak", with X being the incremental number for unsaved projects. All backup files are saved in the project folder.

- To specify the time intervals in which a backup copy is created, use the **Auto Save Interval** setting.
- To specify how many backup files are created with the Auto Save function, use the **Maximum Backup Files** option. When the maximum number of backup files is reached, the existing files are overwritten, starting with the oldest file.

Saving Project Files As a New Version

You can create and activate a new version of an active project file. This is useful if you are experimenting with edits and arrangements and want to be able to go back to a previous version at any time.

To save a new version of the active project, do one of the following:

- Select **File > Save New Version**.
- Press **Ctrl/Cmd-Alt-S**.

The new file is saved with the same name as the original project and an attached incremental number. For example, if your project is called "My Project," new versions are called "My Project-01", "My Project-02", and so on.

Reverting to the Last Saved Version

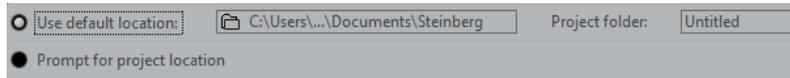
You can return to the last saved version and discard all changes that have been introduced.

PROCEDURE

1. Select **File > Revert**.
2. In the warning message, click **Revert**.
If you have recorded or created new audio files since the last version was saved, you are prompted to delete or keep the files.

Choosing a Project Location

In the **Hub** and in the **Project Assistant**, you can specify where to save a project.



- To create a project in the default project location, select **Use default location**.
In the **Project folder** field, you can specify a name for the project folder. If you do not specify a project folder here, the project is saved in a folder named `Untitled`.
- To change the default project location, click in the path field.
A file dialog opens that allows you to specify a new default location.
- To create the project in a different location, select **Prompt for project location**.
In the dialog that opens, specify a location and a project folder.

Removing Unused Audio Files

You can use the **Cleanup** function to locate and delete unused audio files in the project folders on your disk.

PREREQUISITE

Make sure that you have not moved or renamed files or folders without updating the project files to use the new paths. Also make sure that the project folder does not contain audio files that belong to projects that are not saved in the project folder.

PROCEDURE

1. Close all projects.
2. Select **File > Cleanup**.
3. Click **Start**.
Cubase scans the hard disks for project folders and lists all audio and image files that are not used by any project.

NOTE

You can also click **Search Folder** to select a specific folder for the Cleanup function. This is only recommended if you are sure that the folder contains no audio files that are used in other projects.

4. Select the files that you want to delete and click **Delete**.
-

Creating Self-Contained Projects

If you want to share your work or transfer it to another computer, your project must be self-contained.

The following functions facilitate this task:

- Select **Media > Prepare Archive** to verify that every clip that is referenced in the project is located in the project folder, and to take actions if that is not the case.
- Select **File > Back up Project** to create a new project folder where you can save the project file and the necessary work data. The original project remains unchanged.

Preparing Archives

The Prepare Archive function allows you to gather all files that are referenced by your project to ensure that these are in the project folder. This is useful if you want to move or archive your project.

PROCEDURE

1. Select **Media > Prepare Archive**.
If your project references external files, you are prompted if you want to copy them to your working directory. If any processing has been applied, you must decide if you want to freeze edits.
2. Click **Proceed**.

RESULT

Your project is ready to be archived. You can move or copy the project folder to another location.

AFTER COMPLETING THIS TASK

You must copy audio files that reside within the project folder to the Audio folder or save them separately. You must also move your video clips manually, as videos are only referenced and not saved in the project folder.

Backing Up Projects

You can create a backup copy of your project. Backups only contain the necessary work data. All media files except the files from VST Sound archives are included as a copy.

PROCEDURE

1. Select **File > Back up Project**.
2. Select an empty folder or create a new one.
3. Make your settings in the **Back up Project Options** dialog and click **OK**.

RESULT

A copy of the project is saved in the new folder. The original project remains unaffected.

NOTE

VST Sound content provided by Steinberg is copy-protected and will not be included in the backup project. If you want to use a backup copy that uses VST Sound content on a different computer, make sure that the corresponding content is also available on that computer.

Back up Project Options Dialog

This dialog allows you to create a backup copy of your project.

- To open the **Back up Project Options** dialog, select **File > Back up Project**.

Project Name

Allows you to change the name of the backed up project.

Keep Current Project Active

Allows you to keep the current project active after clicking **OK**.

Minimize Audio Files

Allows you to include only the audio file portions that are actually used in the project. This can significantly reduce the size of the project folder if you are using small sections of large files. It also means that you cannot use other parts of the audio files if you continue working with the project in its new folder.

Freeze Edits

Allows you to freeze all edits and make all processing and applied effects permanent to each clip in the Pool.

Remove Unused Files

Allows you to remove unused files and to back up only the files that are actually used.

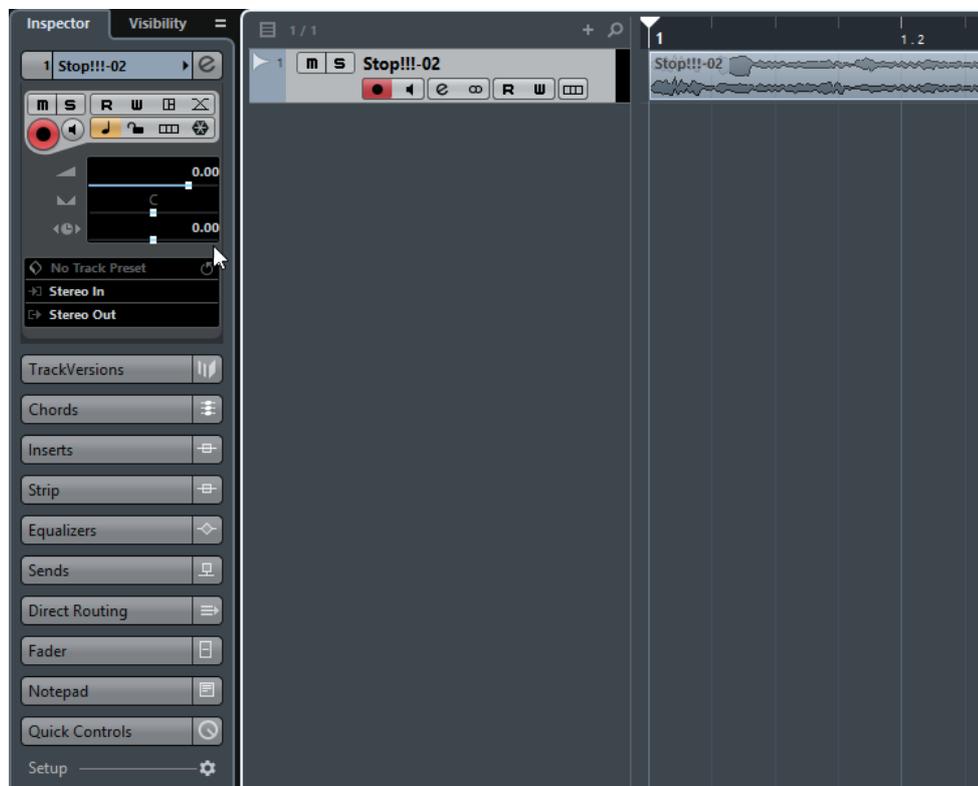
Do Not Back up Video

Allows you to exclude video clips on the video track or in the Pool of the current project.

Tracks

Tracks are the building blocks of your project. They allow you to import, add, record, and edit data (parts and events). Tracks are listed from top to bottom in the Track list and extend horizontally across the **Project** window. Each track is assigned to a particular channel strip in the MixConsole.

If you select a track in the **Project** window, the controls, settings, and parameters displayed in the Inspector and the track list allow you to control the track.

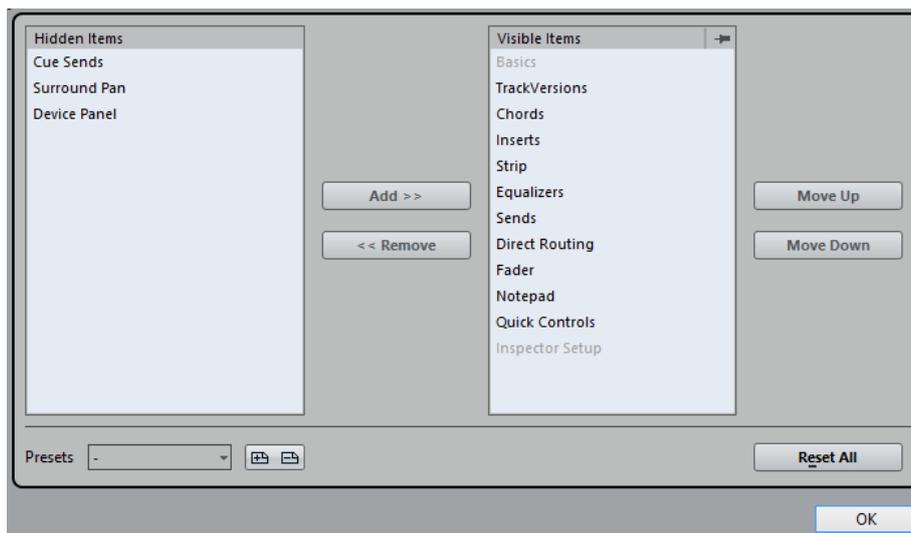


Track Inspector Settings

For each track type you can configure which **Inspector** sections are shown. You can also specify the order of the sections.

- To open the **Track Inspector Settings** dialog, click **Setup Inspector**, and select **Setup** from the pop-up menu.





Hidden Items

Displays sections that are hidden in the **Inspector**.

Visible Items

Displays sections that are visible in the **Inspector**.

Pin

If you activate **Pin** by clicking the column for a section the open/close status of the selected **Inspector** section is pinned.

Add

Allows you to move an item selected in the hidden sections list to the list of visible sections.

Remove

Allows you to move an item selected in the visible sections list to the list of hidden sections.

Move Up/Move Down

Allows you to change the order of an item in the list of visible sections.

Presets

Allows you to save **Inspector** section settings as presets.

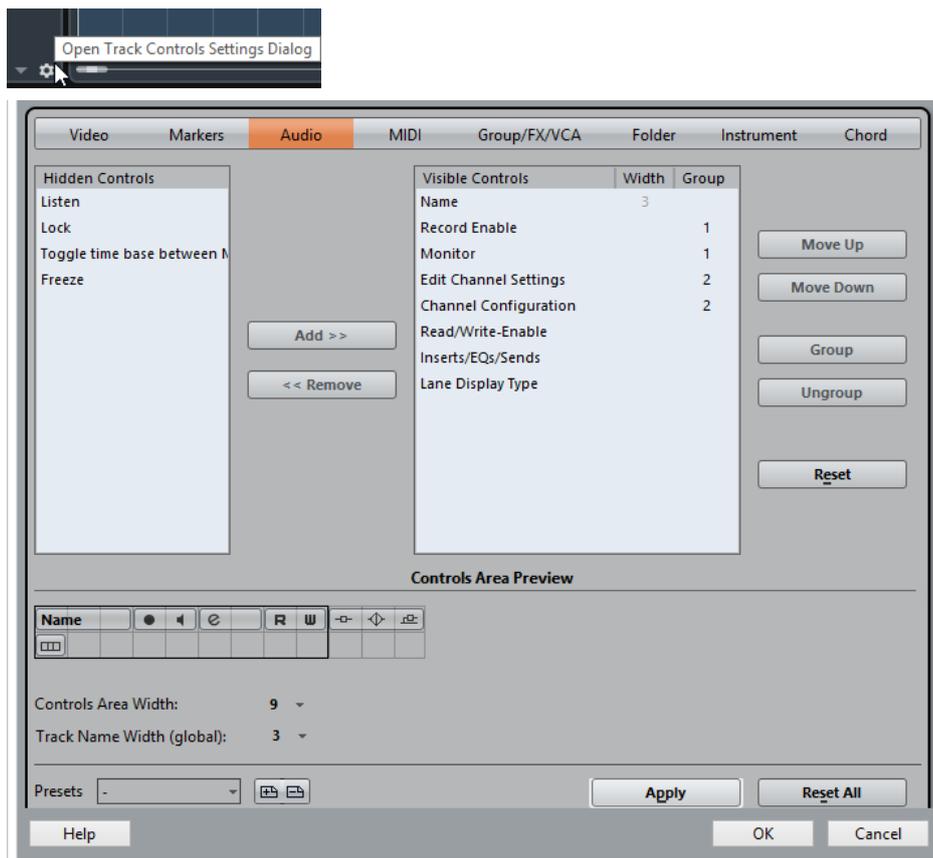
Reset All

Allows you to restore the default **Inspector** section settings.

Track Control Settings

For each track type you can configure which track controls are shown in the track list. You can also specify the order of controls and group controls so that they are always shown adjacent to each other.

- To open the **Track Controls Settings** dialog, right-click a track in the track list and select **Track Controls Settings** from the context menu, or click **Open Track Controls Settings Dialog** in the bottom right corner of the track list.



Track Type

Allows you to select the track type to which your settings are applied.

Hidden Controls

Displays controls that are hidden in the track list.

Visible Controls

Displays controls that are visible in the track list.

Width

If you click in this column, you can set the maximum length for the track name.

Group

Displays the group number.

Add

Allows you to move an item selected in the hidden controls list to the list of visible controls.

Remove

Allows you to move an item selected in the visible controls list to the list of hidden controls. All controls can be removed except **Mute** and **Solo**.

Move Up/Move Down

Allows you to change the order of an item in the list of visible controls.

Group

Allows you to group two or more controls selected in the visible controls list that are adjacent to each other. This ensures that they are always positioned side by side in the track list.

Ungroup

Allows you to ungroup grouped controls in the visible controls list. To remove an entire group, select the first (topmost) element belonging to this group and click **Ungroup**.

Reset

Allows you to restore all default track controls settings for the selected track type.

Controls Area Preview

Shows a preview of the customized track controls.

Controls Area Width

Allows you to determine the width of the track control area for the selected track type. In the **Controls Area Preview**, this area is shown with a frame.

Presets

Allows you to save track controls settings as presets. To recall a preset, click **Switch Presets** in the bottom right corner of the track list. The name of the selected preset is shown in the left corner.

Track Name Width (global)

Allows you to determine the global name width for all track types.

Apply

Applies your settings.

Reset All

Allows you to restore all default track controls settings for all track types.

Audio Tracks

You can use audio tracks for recording and playing back audio events and audio parts. Each audio track has a corresponding audio channel in the MixConsole. An audio track can have any number of automation tracks for automating channel parameters, effect settings, etc.

- To add an audio track to your project, select **Project > Add Track > Audio**.

RELATED LINKS

[Adding Tracks](#) on page 155

Audio Track Inspector

The **Inspector** for audio tracks contains controls and parameters that allow you to edit your audio track.



The top section of the audio track **Inspector** contains the following basic track settings:

Track name



Click once to show/hide the basic track settings section. Double-click to rename the track.

Edit



Opens the **Channel Settings** window for the track.

Mute



Mutes the track.

Solo



Solos the track.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Open Device Panels (Cubase Pro only)



Allows you to create a device panel for the plug-in and device parameters of your track.

Auto Fades Settings



Opens a dialog where you can make separate audio fade settings for the track.

Record enable



Activates the track for recording.

Monitor



Routes incoming signals to the selected output.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



Disables all editing of all events on the track.

Show Lanes



Divides the tracks in lanes.

Freeze Audio Channel



Allows you to freeze the audio channel.

Volume



Allows you to adjust the level for the track.

Pan



Allows you to adjust the panning of the track.

Delay



Allows you to adjust the playback timing of the track.

Load/Save/Reload Track Preset



Loads or saves a track preset or reverts the default presets.

Input Routing



Allows you to specify the input bus for the track.

Output Routing



Allows you to specify the output bus for the track.

Audio Track Inspector sections

Apart from the basic track settings that are always shown, audio tracks provide other Inspector sections. These are described in the following sections.

TrackVersions



Allows you to create and edit **TrackVersions**.

Chords Section



Allows you to specify how the track follows the chord track.

Inserts Section



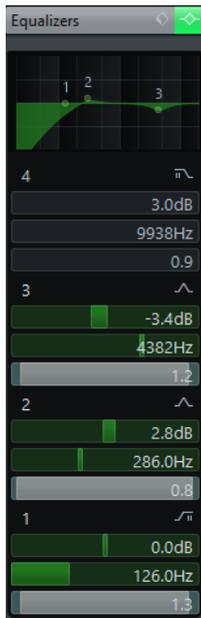
Allows you to add insert effects to the track.

Strip Section



Allows you to set up the channel strip modules.

Equalizers Section



Allows you to adjust the EQs for the track. You can have up to four bands of EQ for each track.

Sends Section



Allows you to route the track to one or several FX channels.

Cue Sends Section (Cubase Pro only)



Allows you to route cue mixes to **Control Room** cues.

Direct Routing Section



Allows you to set up direct routing.

Surround Pan Section (Cubase Pro only)



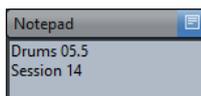
Shows the **MultiPanner** for a track (if used).

Fader Section



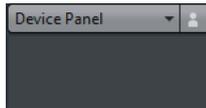
Shows a duplicate of the corresponding **MixConsole** channel.

Notepad Section



Allows you to enter notes about the track.

Device Panel Section (Cubase Pro only)



Allows you to display and use device panels.

Quick Controls Section



Allows you to configure quick controls to use remote devices, for example.

Audio Track Controls

The Track List for audio tracks contains controls and parameters that allow you to edit your audio track.



Track name

Audio 01

Double-click to rename the track.

Edit



Opens the **Channel Settings** window for the track.

Mute



Mutes the track.

Solo



Solos the track.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Record enable



Activates the track for recording.

Monitor



Routes incoming signals to the selected output.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



Disables all editing of all events on the track.

Show Lanes



Divides the tracks in lanes.

Bypass Inserts



Bypasses the inserts for the track.

Bypass EQs



Bypasses the equalizers for the track.

Bypass Sends



Bypasses the sends for the track.

Channel Configuration



Shows the channel configuration of the track.

Listen



The listen indicator is lit if the track is in listen mode.

Freeze Channel



Opens the **Freeze Channel Options** dialog that allows you to set the **Tail Size** time in seconds.

Instrument Tracks

You can use instrument tracks for dedicated VST instruments. Each instrument track has a corresponding instrument channel in the **MixConsole**. An instrument track can have any number of automation tracks.

- To add an instrument track to your project, select **Project > Add Track > Instrument**.

Instrument Track Inspector

The Inspector for instrument tracks contains controls and parameters that allow you to control your instrument track. It shows some of the sections from VST instrument channels and MIDI tracks.



The top section of the instrument track Inspector contains the following basic track settings:

Track name

HALion Sonic SE

Click once to show/hide the basic track settings section. Double-click to rename the track.

Edit



Opens the **Channel Settings** window for the track.

Mute



Mutes the track.

Solo



Solos the track.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Open Device Panels



Allows you to open the instrument panel.

Input Transformer



Opens the **Input Transformer** dialog that allows you to transform incoming MIDI events in realtime.

Record enable



Activates the track for recording.

Monitor



Routes incoming MIDI to the selected MIDI output. For this to work, open the **Preferences** dialog, select **MIDI**, and activate **MIDI Thru Active**.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



Disables all editing of all events on the track.

Freeze Instrument Channel



Allows you to freeze the instrument.

Volume



Allows you to adjust the level of the track.

Pan



Allows you to adjust the panning of the track.

Delay



Allows you to adjust the playback timing of the track.

Show Lanes



Divides the tracks in lanes.

Load/Save/Reload Track Preset



Loads or saves a track preset or reverts the default presets.

Input Routing



Allows you to specify the input bus for the track.

Activate Outputs



This control is only available if the instrument provides more than one output. It allows you to activate one or more outputs for the instrument.

Edit Instrument



Allows you to open the instrument panel.

Programs



Allows you to select a program.

Drum Map

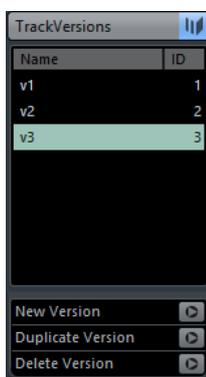


Allows you to select a drum map for the track.

Instrument Track Inspector Sections

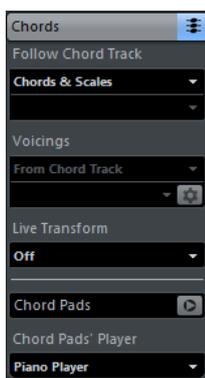
Apart from the basic track settings that are always shown, instrument tracks provide other Inspector sections. These are described in the following sections.

TrackVersions



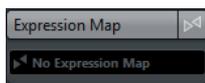
Allows you to create and edit **TrackVersions**.

Chords Section



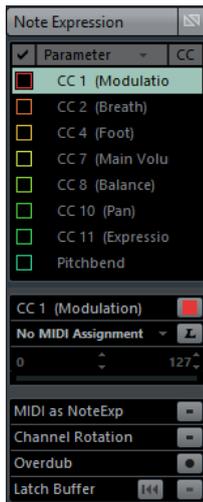
Allows you to specify how the track follows the chord track.

Expression Map Section



Allows you to use the **Expression Map** features.

Note Expression Section



Allows you to work with the **Note Expression** features.

MIDI Modifiers Section



Allows you to transpose or adjust the velocity of the MIDI track events in realtime during playback.

MIDI Inserts Section



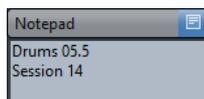
Allows you to add MIDI insert effects.

Instrument Section



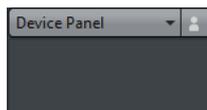
Shows the audio-related controls for the instrument.

Notepad Section



Allows you to enter notes about the track.

Device Panel Section (Cubase Pro only)



Allows you to display and use device panels.

Quick Controls Section



Allows you to configure quick controls to use remote devices, for example.

Instrument Track Controls

The Track List for instrument tracks contains controls and parameters that allow you to edit your instrument track.



Mute



Mutes the track.

Solo



Solos the track.

Track name



Double-click to rename the track.

Record enable



Activates the track for recording.

Monitor



Allows you to route incoming MIDI signals to the selected MIDI output. For this to work, open the **Preferences** dialog, select **MIDI**, and activate **MIDI Thru Active**.

Edit



Opens the **Channel Settings** window for the track.

Edit Instrument



Allows you to open the instrument panel.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Show Lanes



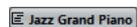
Divides the tracks in lanes.

ASIO Latency Compensation



Moves all recorded events on the track by the current latency.

Programs



Allows you to select a program.

Bypass Inserts



Bypasses the inserts for the track.

Bypass EQs



Bypasses the equalizers for the track.

Bypass Sends



Bypasses the sends for the track.

Instrument



Allows you to select an instrument.

Listen



The listen indicator is lit if the track is in listen mode.

Edit In-Place



Allows you to edit MIDI events and parts on the track in the **Project** window.

Lock



Disables all editing of all events on the track.

Channel Configuration



Shows the channel configuration of the track.

Drum Map



Allows you to select a drum map for the track.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Freeze Channel



Opens the **Freeze Channel Options** dialog that allows you to set the **Tail Size** time in seconds.

Load available update



This button lights up when other users have made changes to a track and committed them over the network to indicate that you can load the changes and update the project.

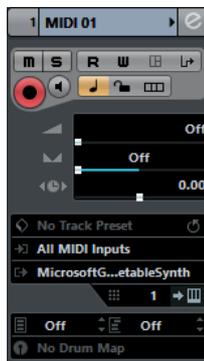
MIDI Tracks

You can use MIDI tracks for recording and playing back MIDI parts. Each MIDI track has a corresponding MIDI channel in the **MixConsole**. A MIDI track can have any number of automation tracks.

- To add a MIDI track to your project, select **Project > Add Track > MIDI**.

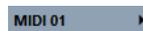
MIDI Track Inspector

The Inspector for MIDI tracks contains controls and parameters that allow you to control your MIDI track. These affect MIDI events in realtime, on playback, for example.



The top section of the MIDI track Inspector contains the following basic track settings:

Track name



Click once to show/hide the basic track settings section. Double-click to rename the track.

Edit



Opens the **Channel Settings** window for the track.

Mute



Mutes the track.

Solo



Solos the track.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Open Device Panels



Allows you to open the instrument panel.

Input Transformer



Opens the **Input Transformer** dialog that allows you to transform incoming MIDI events in realtime.

Record enable



Activates the track for recording.

Monitor



Routes incoming MIDI to the selected MIDI output. For this to work, open the **Preferences** dialog, select **MIDI**, and activate **MIDI Thru Active**.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



Disables all editing of all events on the track.

Show Lanes



Divides the tracks in lanes.

MIDI Volume



Allows you to adjust the MIDI volume for the track.

MIDI Pan



Allows you to adjust the MIDI pan for the track.

Delay



Allows you to adjust the playback timing of the track.

Load/Save/Reload Track Preset



Loads or saves a track preset or reverts the default presets.

Input Routing



Allows you to specify the input bus for the track.

Output Routing



Allows you to specify the output bus for the track.

Channel



Allows you to specify the MIDI channel.

Edit Instrument



Allows you to open the instrument panel.

Bank Selector



Allows you to set a bank select message that is sent to your MIDI device.

Program Selector



Allows you to set a program change message that is sent to your MIDI device.

Drum Map

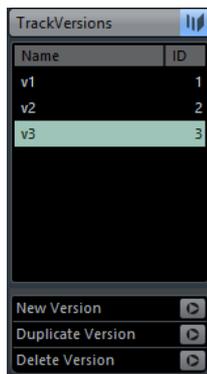


Allows you to select a drum map for the track.

MIDI Track Inspector Sections

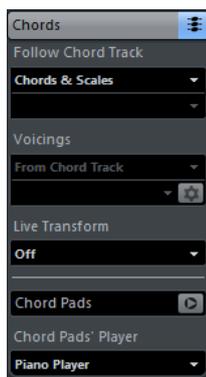
Apart from the basic track settings that are always shown, MIDI tracks provide other Inspector sections. These are described in the following sections.

TrackVersions



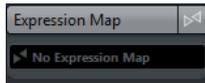
Allows you to create and edit **TrackVersions**.

Chords Section



Allows you to specify how the track follows the chord track.

Expression Map Section



Allows you to use the **Expression Map** features.

Note Expression Section



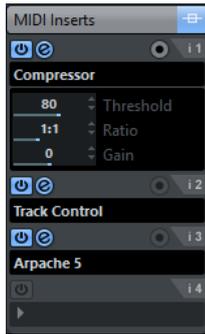
Allows you to work with the **Note Expression** features.

MIDI Modifiers Section



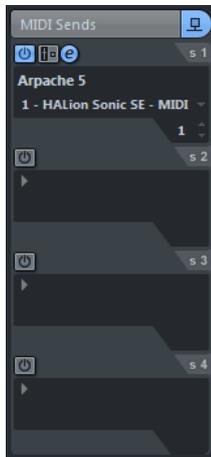
Allows you to transpose or adjust the velocity of the MIDI track events in realtime during playback.

MIDI Inserts Section



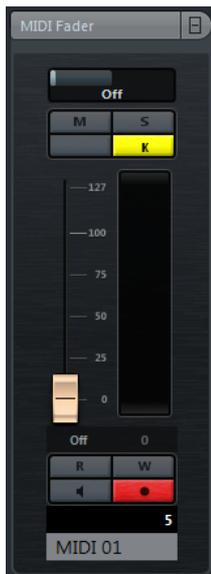
Allows you to add MIDI insert effects.

MIDI Sends Section



Allows you to add MIDI send effects.

MIDI Fader Section



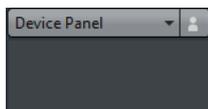
Shows a duplicate of the corresponding **MixConsole** channel.

Notepad Section



Allows you to enter notes about the track.

Device Panel Section (Cubase Pro only)



Allows you to display and use device panels.

Quick Controls Section



Allows you to configure quick controls to use remote devices, for example.

MIDI Track Controls

The Track List for MIDI tracks contains controls and parameters that allow you to edit your MIDI track.



The track list for MIDI tracks contains the following controls:

Mute



Mutes the track.

Solo



Solos the track.

Track name



Click once to show/hide the basic track settings section. Double-click to rename the track.

Record enable



Activates the track for recording.

Monitor



Allows you to route incoming MIDI signals to the selected MIDI output. For this to work, open the **Preferences** dialog, select **MIDI**, and activate **MIDI Thru Active**.

Channel



Allows you to specify the MIDI channel.

Read Automation



Allows you to read track automation.

Write Automation



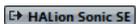
Allows you to write track automation.

Show Lanes



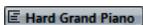
Divides the tracks in lanes.

Output



Allows you to specify the output for the track.

Programs



Allows you to select a program.

Edit In-Place



Allows you to edit MIDI events and parts on the track in the **Project** window.

Bypass Inserts



Bypasses the inserts for the track.

Bypass Sends



Bypasses the sends for the track.

Lock



Disables all editing of all events on the track.

Edit



Opens the **Channel Settings** window for the track.

Drum Map



Allows you to select a drum map for the track.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Load available update



This button lights up when other users have made changes to a track and committed them over the network to indicate that you can load the changes and update the project.

ASIO Latency Compensation



Moves all recorded events on the track by the current latency.

Sampler Tracks

You can use sampler tracks for controlling the playback of audio samples via MIDI. Each sampler track has a corresponding channel in the **MixConsole**. A sampler track can have any number of automation tracks.

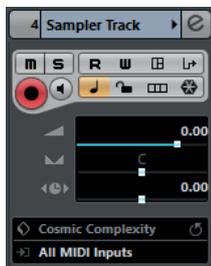
- To add a sampler track, select **Project > Add Track > Sampler**.

RELATED LINKS

[Creating Sampler Tracks](#) on page 498

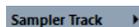
Sampler Track Inspector

The **Inspector** for sampler tracks contains controls and parameters that allow you to edit your sampler track.



The top section of the sampler track Inspector contains the following basic track settings:

Track name



Click once to show/hide the basic track settings section. Double-click to rename the track.

Edit



Opens the **Channel Settings** window for the track.

Mute



Mutes the track.

Solo



Solos the track.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Open Device Panels



Allows you to open the instrument panel.

Input Transformer



Opens the **Input Transformer** dialog that allows you to transform incoming MIDI events in realtime.

Record enable



Activates the track for recording.

Monitor



Routes incoming MIDI to the selected MIDI output. For this to work, open the **Preferences** dialog, select **MIDI**, and activate **MIDI Thru Active**.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



Disables all editing of all events on the track.

Show Lanes



Divides the tracks in lanes.

Freeze Instrument Channel



Allows you to freeze the sampler track.

Volume



Allows you to adjust the level of the track.

Pan



Allows you to adjust the panning of the track.

Delay



Allows you to adjust the playback timing of the track.

Load/Save/Reload Track Preset



Loads or saves a track preset or reverts the default presets.

Input Routing



Allows you to specify the input bus for the track.

Sampler Track Inspector Sections

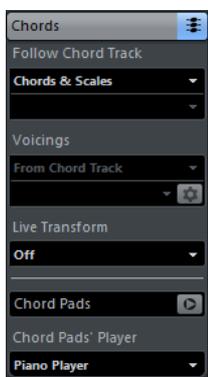
Apart from the basic track settings that are always shown, sampler tracks provide other Inspector sections. These are described in the following sections.

TrackVersions



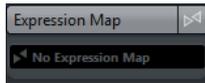
Allows you to create and edit **TrackVersions**.

Chords Section



Allows you to specify how the track follows the chord track.

Expression Map Section



Allows you to use the **Expression Map** features.

Note Expression Section



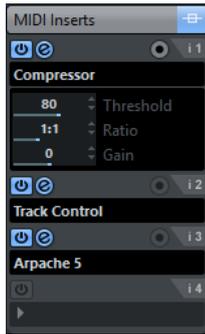
Allows you to work with the **Note Expression** features.

MIDI Modifiers Section



Allows you to transpose or adjust the velocity of the MIDI track events in realtime during playback.

MIDI Inserts Section



Allows you to add MIDI insert effects.

Instrument Section



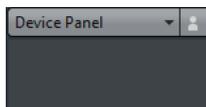
Shows the audio-related controls for the sampler track.

Notepad Section



Allows you to enter notes about the track.

Device Panel Section (Cubase Pro only)



Allows you to display and use device panels.

Quick Controls Section



Allows you to configure quick controls to use remote devices, for example.

Sampler Track Controls

The track list for sampler tracks contains controls and parameters that allow you to edit your sampler track.



Mute



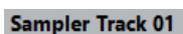
Mutes the track.

Solo



Solos the track.

Track name



Double-click to rename the track.

Record enable



Activates the track for recording.

Monitor



Allows you to route incoming MIDI signals to the selected MIDI output. For this to work, open the **Preferences** dialog, select **MIDI**, and activate **MIDI Thru Active**.

Edit



Opens the **Channel Settings** window for the track.

Open/Close Sampler

Opens/Closes the **Sample Control** in the lower zone.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Show Lanes



Divides the tracks in lanes.

ASIO Latency Compensation



Moves all recorded events on the track by the current latency.

Bypass Inserts



Bypasses the inserts for the track.

Bypass EQs



Bypasses the equalizers for the track.

Bypass Sends



Bypasses the sends for the track.

Listen



The listen indicator is lit if the track is in listen mode.

Edit In-Place



Allows you to edit MIDI events and parts on the track in the **Project** window.

Lock



Disables all editing of all events on the track.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Freeze Channel



Opens the **Freeze Channel Options** dialog that allows you to set the **Tail Size** time in seconds.

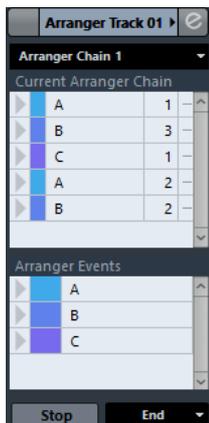
Arranger Track

You can use the arranger track for arranging your project by marking out sections and determining in which order they are to be played back.

- To add the arranger track to your project, select **Project > Add Track > Arranger**.

Arranger Track Inspector

The arranger track Inspector displays the lists of available arranger chains and arranger events.



The arranger track Inspector contains the following settings:

Track Name

Arranger Track

Double-click to rename the track.

Edit



Opens the **Arranger Editor**.

Select Active Arranger Chain + Function

Arranger Chain 1

Allows you to select the active arranger chain, to rename it, to create a new one, to duplicate or to flatten it.

Current Arranger Chain

Current Arranger Chain

Shows the active arranger chain.

Arranger Events

Arranger Events

Lists all arranger events in your project. Click the arrow for an arranger event to play it back and start the live mode.

Stop

Stop

Allows you to stop the live mode.

Jump mode

End

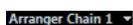
Allows you to define how long the active arranger event is played before jumping to the next one.

Arranger Track Controls

The track list for the arranger track contains controls and parameters that allow you to edit the arranger track.



Select Active Arranger Chain



Allows you to select the active arranger chain.

Current Item/Current Repeat



Displays which arranger event and which repeat is active.

Activate Arranger Mode



Allows you to activate and deactivate the arranger mode.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Edit



Opens the **Arranger Editor** for the track.

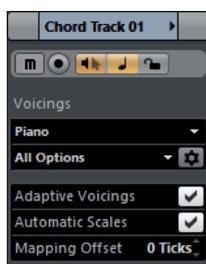
Chord Track

You can use the chord track for adding chord and scale events to your project. These can transform the pitches of other events.

- To add the chord track to your project, select **Project > Add Track > Chord**.

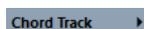
Chord Track Inspector

The chord track Inspector contains a number of settings for the chord events.



The top section of the chord track Inspector contains the following settings:

Track name



Click to show/hide the basic track settings section.

Mute



Mutes the track.

Record enable



Activates the track for recording.

Acoustic Feedback



Allows you to audition the events on the chord track. For this to work, you need to select a track for auditioning in the track list.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



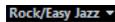
Disables all editing of all events on the track.

Voicing library



Allows you to set up a voicing library for the track.

Voicing library subset



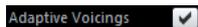
Allows you to select a library subset.

Configure voicing parameters



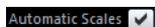
Allows you to configure your own voicing parameters for a specific voicing scheme.

Adaptive Voicings



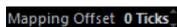
If this option is activated the voicings will be set automatically.

Automatic Scales



If this option is activated the program creates scale events automatically.

Mapping Offset



Allows you to specify an offset value to make sure that chord events also affect the MIDI notes that have been triggered too early (enter a negative value) or too late (enter a positive value).

Chord Track Inspector Sections

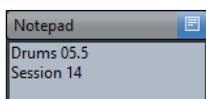
Apart from the basic track settings that are always shown, the chord track provides other Inspector sections. These are described in the following sections.

TrackVersions



Allows you to create and edit **TrackVersions**.

Notepad Section



Allows you to enter notes about the track.

Chord Track Controls

The Track List for the chord track contains controls and parameters that allow you to edit the chord track.



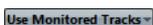
The track list for chord tracks contains the following controls:

Mute



Mutes the track.

Select Track for Auditioning



Allows you to select a track for auditioning the chord events.

Record Enable



Allows you to record chord events.

Resolve Display Conflicts



Allows you to show all chord events on the track properly, even at low horizontal zoom levels.

Show Scales



Allows you to show the scale lane in the lower part of the chord track.

Lock



Disables all editing of all events on the track.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

FX Channel Tracks

You can use FX channel tracks for adding send effects. Each FX channel can contain up to eight effect processors. By routing sends from an audio channel to an FX channel, you send audio from the audio channel to the effects on the FX channel. You can place FX channel tracks in a special FX channel folder, or in the track list, outside a FX channel folder. Each FX channel has a corresponding channel in the MixConsole. An FX channel track can have any number of automation tracks.

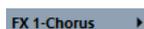
- To add an FX channel track to your project, select **Project > Add Track > FX Channel**.

FX Channel Track Inspector

The Inspector for FX channel tracks shows the settings for the FX channel. When you select the folder track instead, the Inspector shows the folder and the FX channels it contains. You can click one of the FX channels shown in the folder to have the Inspector show the settings for that FX channel.



Track name



Click once to show/hide the basic track settings section. Double-click to rename the track.

Edit



Opens the **Channel Settings** window for the track.

Mute



Mutes the track.

Solo



Solos the track.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



Disables all editing of all events on the track.

Volume



Allows you to adjust the level of the track.

Pan



Allows you to adjust the panning of the track.

Output Routing



Allows you to specify the output bus for the track.

FX Channel Track Inspector Sections

Apart from the basic track settings that are always shown, FX channel tracks provide other Inspector sections. These are described in the following sections.

Inserts Section



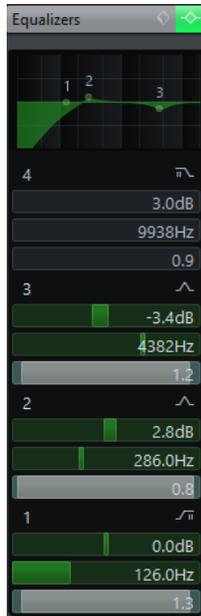
Allows you to add insert effects to the track.

Strip Section



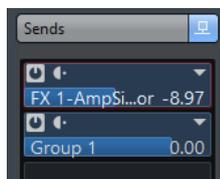
Allows you to set up the channel strip modules.

Equalizers Section



Allows you to adjust the EQs for the track. You can have up to four bands of EQ for each track.

Sends Section



Allows you to route the track to one or several FX channels.

Cue Sends Section (Cubase Pro only)



Allows you to route cue mixes to **Control Room** cues.

Direct Routing Section



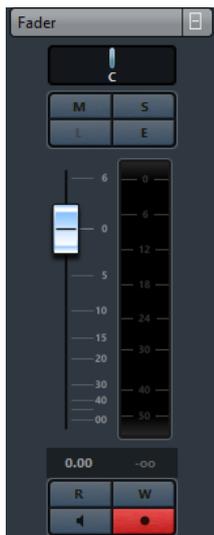
Allows you to set up direct routing.

Surround Pan Section (Cubase Pro only)



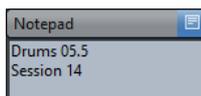
Shows the **MultiPanner** for a track (if used).

Fader Section



Shows a duplicate of the corresponding **MixConsole** channel.

Notepad Section



Allows you to enter notes about the track.

Quick Controls Section



Allows you to configure quick controls to use remote devices, for example.

FX Channel Track Controls

The Track List for FX channel tracks contains controls and parameters that allow you to edit the settings for the effect.



Track name

FX 2-MonoDelay

Click once to show/hide the basic track settings section. Double-click to rename the track.

Edit



Opens the **Channel Settings** window for the track.

Mute



Mutes the track.

Solo



Solos the track.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Mute Automation



Deactivates the automation read function for the selected parameter.

Automation parameter

Volume -38.2

Allows you to select a parameter for automation.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



Disables all editing of all events on the track.

Bypass Inserts



Bypasses the inserts for the track.

Bypass EQs



Bypasses the equalizers for the track.

Bypass Sends



Bypasses the sends for the track.

Channel Configuration



Shows the channel configuration of the track.

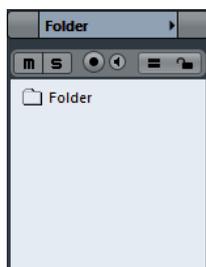
Folder Tracks

Folder tracks function as containers for other tracks, making it easier to organize and manage the track structure. They also allow you to edit several tracks at the same time.

- To add a folder track to your project, select **Project > Add Track > Folder**.

Folder Track Inspector

The Inspector for folder tracks shows the folder and its underlying track, much like a folder structure in the File Explorer/Mac OS Finder. When you select the one of the tracks shown under the folder, the Inspector shows the settings for that track.



Track name



Double-click to rename the track.

Mute



Mutes the track.

Solo



Solos the track.

Record enable



Activates the track for recording.

Monitor



Routes incoming signals to the selected output.

Group Editing



Allows you to activate the group editing mode.

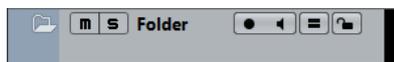
Lock



Disables all editing of all events on the track.

Folder Track Controls

The Track List for folder tracks contains controls and parameters that allow you to edit all tracks in the folder.



Expand/Collapse

Shows/hides the tracks in the folder. Hidden tracks are played back as usual.

Track name



Double-click to rename the track.

Mute



Mutes the track.

Solo



Solos the track.

Record enable



Activates the track for recording.

Monitor



Routes incoming signals to the selected output.

Group Editing



Allows you to activate the group editing mode.

Lock



Disables all editing of all events on the track.

Group Channel Tracks

You can use group channel tracks to create a submix of several audio channels and apply the same effects to them. A group channel track contains no events as such, but displays settings and automation for the corresponding group channel.

All group channel tracks are automatically placed in a special group track folder in the track list, for easy management. Each group channel track has a corresponding channel in the MixConsole. A group channel track can have any number of automation tracks.

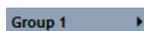
- To add a group channel track to your project, select **Project > Add Track > Group Channel**.

Group Channel Track Inspector

The Inspector for group channel tracks shows the settings for the group channel.



Track name



Click once to show/hide the basic track settings section. Double-click to rename the track.

Edit



Opens the **Channel Settings** window for the track.

Mute Automation



Deactivates the automation read function for the selected parameter.

Solo



Solos the track.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



Disables all editing of all events on the track.

Volume



Allows you to adjust the level for the track.

Pan



Allows you to adjust the panning of the track.

Output Routing



Allows you to specify the output bus for the track.

NOTE

When you select the group folder track instead, the Inspector shows the folder and the group channels it contains. You can click one of the group channels shown in the folder, to have the Inspector show the settings for that group channel.



Group Channel Track Inspector sections

Apart from the basic track settings that are always shown, group channel tracks provide other Inspector sections. These are described in the following sections.

Inserts Section



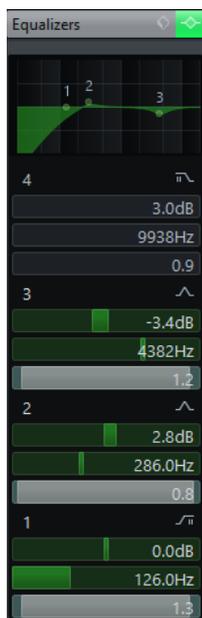
Allows you to add insert effects to the track.

Strip Section



Allows you to set up the channel strip modules.

Equalizers Section



Allows you to adjust the EQs for the track. You can have up to four bands of EQ for each track.

Sends Section



Allows you to route the track to one or several FX channels.

Cue Sends Section (Cubase Pro only)



Allows you to route cue mixes to **Control Room** cues.

Direct Routing Section



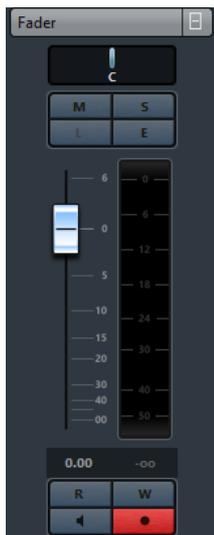
Allows you to set up direct routing.

Surround Pan Section (Cubase Pro only)



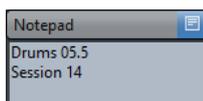
Shows the **MultiPanner** for a track (if used).

Fader Section



Shows a duplicate of the corresponding **MixConsole** channel.

Notepad Section



Allows you to enter notes about the track.

Quick Controls Section



Allows you to configure quick controls to use remote devices, for example.

Group Channel Track Controls

The Track List for group channel tracks contains controls and parameters that allow you to edit the settings for the group.



Track name

Group 1

Double-click to rename the track.

Edit



Opens the **Channel Settings** window for the track.

Mute



Mutes the track.

Solo



Solos the track.

Read Automation



Allows you to read track automation.

Write Automation



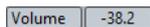
Allows you to write track automation.

Mute Automation



Deactivates the automation read function for the selected parameter.

Automation parameter



Allows you to select a parameter for automation.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



Disables all editing of all events on the track.

Bypass Inserts



Bypasses the inserts for the track.

Bypass EQs



Bypasses the equalizers for the track.

Bypass Sends



Bypasses the sends for the track.

Channel Configuration



Shows the channel configuration of the track.

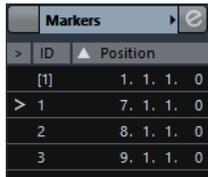
Marker Track

Cubase Pro only: You can use marker tracks to add and edit markers that help you to locate certain positions quickly. Cubase Artist only: You can use the marker track to add and edit markers that help you to locate certain positions quickly.

- To add the marker track to your project, select **Project > Add Track > Marker**.
Cubase Pro only: You can add up to 10 marker tracks in a project.

Marker Track Inspector

The marker track Inspector displays the marker list.



Markers	
ID	Position
[1]	1. 1. 1. 0
> 1	7. 1. 1. 0
2	8. 1. 1. 0
3	9. 1. 1. 0

Track name

Markers 01

Double-click to rename the track.

Edit



Opens the **Channel Settings** window for the track.

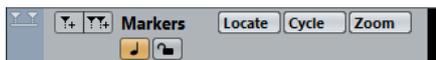
Marker attributes

> ID Position

Shows the markers, their IDs, and time positions. Click in the leftmost column for a marker to move the project cursor to the marker position.

Marker Track Controls

The track list for the marker track contains controls and parameters that allow you to edit the marker track.



Track name

Markers

Double-click to rename the track.

Locate

Locate

Allows you to move the project cursor to the selected marker position.

Cycle

Cycle

Allows you to select a cycle marker.

Zoom

Zoom

Allows you to zoom in a cycle marker.

Add Marker



Allows you to add a position marker at the project cursor position.

Add Cycle Marker



Allows you to add a cycle marker at the project cursor position.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



Disables all editing of all events on the track.

Ruler Track

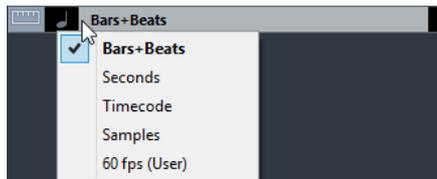
You can use ruler tracks to show several rulers with different display formats for the timeline. This is completely independent from the main ruler, as well as rulers and position displays in other windows.

- To add a ruler track to your project, select **Project > Add Track > Ruler**.

Ruler Track Controls

In the track list for ruler tracks you can change the display format for the ruler.

Right-click the ruler to open the display format pop-up menu.



The following display formats are available:

Bars+Beats

Activates a display format of bars, beats, sixteenth notes, and ticks. By default there are 120 ticks per sixteenth note. To adjust this, open the **Preferences** dialog, select **MIDI**, and set the **MIDI Display Resolution**.

Seconds

Activates a display format of hours, minutes, seconds, and milliseconds.

Timecode

Activates a display format of hours, minutes, seconds, and frames. The number of frames per second (fps) is set in the **Project Setup** dialog with the **Frame Rate** pop-up menu. To display subframes, open the **Preferences** dialog, select **Transport**, and activate **Show Timecode Subframes**.

Samples

Activates a display format of samples.

fps (User)

Activates a display format of hours, minutes, seconds, and frames, with a user-definable number of frames per second. To display subframes, open the **Preferences** dialog, select **Transport**, and activate **Show Timecode Subframes**. On the **Transport** page, you can also set the frame rate.

NOTE

Ruler tracks are not affected by the display format setting in the **Project Setup** dialog.

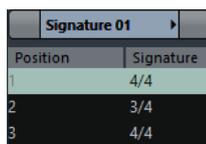
Signature Track

You can use the signature track to add and edit signature events. The signature track's background always shows bars. This is independent of the ruler display format setting.

- To add the signature track to your project, select **Project > Add Track > Signature**.

Signature Track Inspector

The signature track Inspector displays a list of all time signature events.



Signature 01	
Position	Signature
1	4/4
2	3/4
3	4/4

Signatures list



Position	Signature
----------	-----------

Shows a list of all signature events that allows you to edit signature events and their positions.

Signature Track Controls

The track list for the signature track contains controls and parameters that allow you to edit the signature track.



Lock



Disables all editing of all events on the track.

Current Time Signature



Allows you to change the time signature at the project cursor position.

Open Process Bars Dialog



Allows you to open the **Process Bars** dialog.

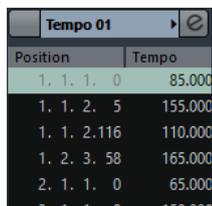
Tempo Track

You can use the tempo track to create tempo changes within a project.

- To add a tempo track to your project, select **Project > Add Track > Tempo**.

Tempo Track Inspector

The tempo track Inspector displays a list of all tempo events.



Position	Tempo
1. 1. 1. 0	85.000
1. 1. 2. 5	155.000
1. 1. 2.116	110.000
1. 2. 3. 58	165.000
2. 1. 1. 0	65.000
3. 1. 1. 0	150.000

Edit



Opens the Tempo Track Editor.

Tempo event list



Shows a list of all tempo events that allows you to edit tempo events and their positions.

Tempo Track Controls

The track list for the tempo track contains controls and parameters that allow you to edit the tempo track.



Activate Tempo Track



Allows you to activate the tempo track. In this mode, the tempo cannot be changed on the Transport panel.

Lock



Disables all editing of all events on the track.

Current Tempo



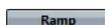
Allows you to change the tempo at the project cursor position.

Open Process Tempo Dialog



Allows you to open the **Process Tempo** dialog.

New Tempo Points Type



Allows you to specify whether the tempo should change gradually (Ramp) or instantly (Jump) from the previous curve point to the new one.

Visible Tempo Upper/Lower Limit



Allows you to specify the display range. This changes the display scale of the tempo track, but not the tempo setting.

Transpose Track

You can use the transpose track to set global key changes.

- To add the transpose track to your project, select **Project > Add Track > Transpose**.

Transpose Track Inspector

The transpose track Inspector contains a number of parameters to control the transpose track.



Keep Transpose in Octave Range



Allows you to keep the transposition in the octave range and ensures that nothing is transposed by more than seven semitones.

Toggle Time Base

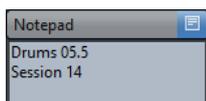


Switches between musical (tempo-related) and linear (time-related) time base for the track.

Transpose Track Inspector sections

Apart from the basic track settings that are always shown, the transpose track provides other Inspector sections. These are described in the following sections.

Notepad Section



Allows you to enter notes about the track.

Transpose Track Controls

The track list for the transpose track contains parameters that allow you to control the transpose track.



Mute Transpose Events



Mutes the track.

Keep Transpose in Octave Range



Allows you to keep the transposition in the octave range and ensures that nothing is transposed by more than seven semitones.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



Disables all editing of all events on the track.

VCA Fader Track (Cubase Pro only)

You can use a VCA fader track to add VCA faders to your project.

- To add a VCA fader track to your project, select **Project > Add Track > VCA Fader**.

RELATED LINKS

[VCA Faders \(Cubase Pro only\)](#) on page 345

[VCA Fader Automation](#) on page 349

[Automation](#) on page 578

VCA Fader Track Inspector

The **Inspector** for VCA fader tracks shows the settings for the VCA faders.



Track name



Click once to show/hide the basic track settings section. Double-click to rename the track.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Lock



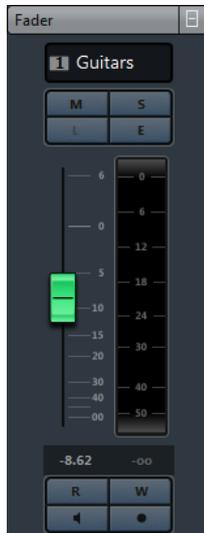
Disables all editing of all events on the track.

Volume



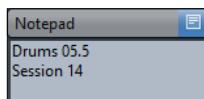
Allows you to adjust the level of the track.

Fader Section



Shows a duplicate of the corresponding **MixConsole** channel.

Notepad Section



Allows you to enter notes about the track.

Quick Controls Section



Allows you to configure quick controls to use remote devices, for example.

VCA Fader Track Controls

The track list for VCA fader tracks contains controls and parameters that allow you to edit the settings for the VCA fader.



Edit



Opens the **Channel Settings** window for the track.

Channel Configuration



Shows the channel configuration of the track.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Lock



Disables all editing of all events on the track.

Toggle Time Base



Switches between musical (tempo-related) and linear (time-related) time base for the track.

Video Track

You can use the video track to play back video events. Video files are displayed as events/clips on the video track, with thumbnails representing the frames in the film.

- To add a video track to your project, select **Project > Add Track > Video**.

Video Track Inspector

The video track Inspector contains a number of parameters to control the video track.



Reveal Video Window



Opens the **Video Player** window.

Mute Video Track



Mutes the track.

Lock



Disables all editing of all events on the track.

Show Frame Numbers



Allows you to show each thumbnail with the corresponding video frame number.

Show Thumbnails

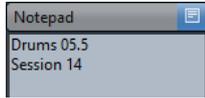


Allows you to activate/deactivate the thumbnails of a video track.

Video Track Inspector Sections

Apart from the basic track settings that are always shown, the video track provides an other Inspector section. This is described in the following section.

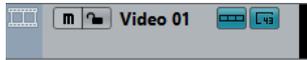
Notepad Section



Allows you to enter notes about the track.

Video Track Controls

The track list for the video track contains a number of parameters to control the video track.



Mute Video Track



Mutes the track.

Lock



Disables all editing of all events on the track.

Show Thumbnails



Allows you to activate/deactivate the thumbnails of a video track.

Show Frame Numbers



Allows you to show each thumbnail with the corresponding video frame number.

Track Handling

Adding Tracks

You can add tracks via the **Project** menu, the context menu, or by dragging files from the **MediaBay**. Tracks can be added with or without track presets.

Add Track Dialog

The **Add Track** dialog opens when you add audio, MIDI, group/FX/VCA channels, or instrument tracks. The available options depend on the track type.

Browse

Expands the dialog and allows you to select a track preset for the track.

Count

Allows you to enter the number of tracks that you want to add.

Effect

Allows you to add a send effect to the track.

Configuration

Allows you to set the channel configuration. Audio-related tracks can be configured as mono, stereo, or surround tracks (Cubase Pro only).

Speakers

Shows the speaker names according to the track configuration.

Track Name

Allows you to specify a track name.

Output Routing

Allows you to set the output routing for audio, instrument, FX, and group tracks.

Channels Folder

Allows you to determine whether the track will be added inside or outside the dedicated FX, group, or VCA Fader channels folder. If you select **Create Outside Channels Folder**, the new track will be added below the selected track.

Add Track

Adds the track and closes the dialog.

Adding Tracks via the Project Menu

PROCEDURE

1. Select **Project > Add Track**.
 2. Select a track of a specific type.
 3. In the **Add Track** dialog, edit the add track options.
 4. Click **Add Track**.
-

RESULT

The new tracks are added to the project below the selected track.

RELATED LINKS

[Add Track Dialog](#) on page 155

Adding Tracks based on Track Presets

You can add tracks based on track presets. Track presets contain sound and channel settings.

PROCEDURE

1. Select **Project > Add Track**.
 2. Select **Using Track Preset**.
You can also right-click the track list and select **Add Track Using Track Preset**.
 3. In the **Choose Track Preset** dialog, select a track preset.
The number and type of the added tracks depend on the selected track preset.
 4. Click **Add Track**.
-

RESULT

The new tracks are added to the project below the selected track.

RELATED LINKS

[Add Track Dialog](#) on page 155

[Track Presets](#) on page 177

Adding Tracks by Dragging Files from the MediaBay

PREREQUISITE

One of the following prerequisites must apply:

- The **MediaBay** is open. To open the **MediaBay** press **F5**.
 - The **MediaBay** in the right zone of the **Project** window is open. Click **Show/Hide Right Zone**  and click the **MediaBay** tab to open it.
-

PROCEDURE

1. In the **MediaBay**, select the files that you want to add tracks for.
2. Drag the files into the track list.
 - The indicator highlights the position at which the new tracks will be added.
 - If you drag multiple audio files into the track list, choose if you want to place all files on one track or on different tracks.

- If you drag multiple audio files into the track list, the **Import Options** dialog opens that allows you to edit the import options.

RESULT

The new tracks are added at the position that was highlighted by the indicator in the track list. The audio files are inserted at the cursor position.

RELATED LINKS

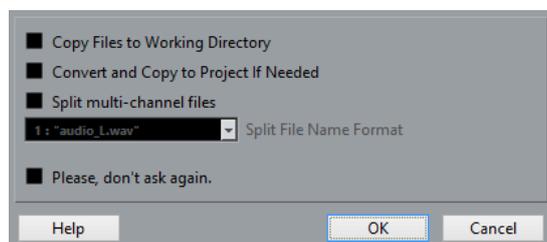
[MediaBay](#) on page 530

[MediaBay in Right Zone](#) on page 530

[Import Options Dialog](#) on page 157

Import Options Dialog

The **Import Options** dialog allows you to edit the import options.



Copy File to Working Directory

If this option is activated, the file is copied to the **Audio** folder of the project, and the clip refers to this copy.

If the option is deactivated, the clip refers to the original file in the original location and will be marked as “external” in the **Pool**.

Copy Files to Working Directory

If this option is activated, the files are copied to the Audio folder of the project, and the clip refers to this copy.

If this option is deactivated, the clip refers to the original files in the original location and will be marked as “external” in the Pool.

Convert and Copy to Project If Needed

If this option is activated, the imported files will be converted only if the sample rate is different or if the sample size is lower than the project sample size.

Split multi-channel Files

If this option is activated, the stereo or multi-channel audio files are split into a corresponding number of mono files, one for each channel.

NOTE

If this option is activated, the imported files are copied to the Audio folder of the project’s working directory.

Please, don’t ask again

If this option is activated, files will always be imported according to the settings that you have made, without this dialog appearing. This can be reset in the Preferences dialog (**Editing > Audio**).

Removing Tracks

You can remove selected or empty tracks from the track list.

- To remove selected tracks, select **Project > Remove Selected Tracks** or right-click the track that you want to remove, and from the context menu select **Remove Selected Tracks**.

NOTE

If you delete tracks that are not empty, a warning message is displayed. You can deactivate this message. To reactivate the message, open the **Preferences** dialog, select **Editing**, and activate **Display Warning before Deleting Non-Empty Tracks**.

- To remove empty tracks, select **Project > Remove Empty Tracks**.

Moving Tracks in the Track List

You can move tracks up or down in the track list.

PROCEDURE

- Select a track and drag it up or down in the track list.
-

Renaming Tracks

PROCEDURE

1. Double-click the track name and type in a new name for the track.
 2. Press **Return**.
If you want all events on the track to get the same name, hold down any modifier key and press **Return**.
-

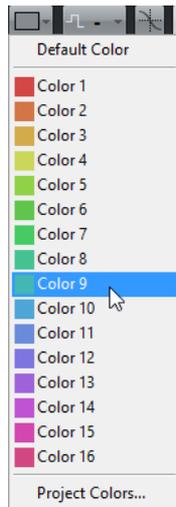
AFTER COMPLETING THIS TASK

If the **Parts Get Track Names** option is activated, and you move an event from one track to another, the moved event will automatically be named according to its new track. To access this option, open the **Preferences** dialog and select **Editing**.

Coloring Tracks

All new tracks are automatically assigned a color according to the **Auto Track Color Mode** settings. However, you can change the track color manually.

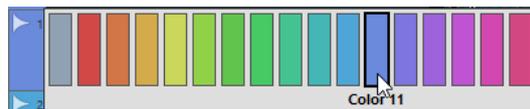
- To change the color for the selected track, use the **Select Colors** pop-up menu on the toolbar.



- You can also use the Track Color Selector. In the **Inspector**, click the arrow to the right of the track name and select a color.



In the track list, **Ctrl/Cmd-click** in the left area and select a color.



- To control which colors are used for new tracks, open the **Preferences** dialog, select **Event Display > Tracks**, and edit the **Auto Track Color Mode** settings.

RELATED LINKS

[Applying track colors automatically](#) on page 982

Showing Track Pictures

You can add pictures to tracks to recognize your tracks easily. Track pictures are available for audio, instrument, MIDI, FX channel and group channel tracks.

PREREQUISITE

Adjust the track height to at least 2 rows.

PROCEDURE

1. Right-click any track in the track list.
2. From the track list context menu, select **Show Track Pictures**.



If you move the mouse to the left on a track, a highlighted rectangle appears.

AFTER COMPLETING THIS TASK

Double-click the rectangle to open the **Track Pictures Browser** and set up a track picture.

RELATED LINKS

[Track Pictures Browser](#) on page 160

Track Pictures Browser

The **Track Pictures Browser** allows you to set up and select pictures that can be shown in the track list and in the MixConsole. Track pictures are useful to recognize tracks and channels easily. You can select pictures from the factory content or add new ones to the user library.

- To open the **Track Pictures Browser** for a track, double-click in the lower left side of the track list.



Factory

Shows the factory content in the pictures browser.

Pictures Browser

Shows the pictures that you can assign to the selected track/channel.

User

Shows your user content in the pictures browser.

Import

Opens a file dialog that allows you to select pictures in bmp, jpeg, or png format and add them to the user library.

Remove Selected Pictures from User Library

Removes the selected picture from the user library.

Reset Current Picture

Removes the picture from the selected track/channel.

Show/Hide Preview

Opens/Closes a section with further color and zoom settings.

Track Picture Preview

Shows the current track picture. When you zoom in the picture, you can drag it with the mouse to change its visible part.

Track Color

Opens the **Track Color Selector**. Click the rectangle to change the track color.

Intensity

Allows you to apply the track color to the track picture and set the color intensity.

Zoom

Allows you to change the size of the track picture.

Rotate

Allows you to rotate the track picture.

Setting the Track Height

You can enlarge the track height to show the events on the track in detail, or you can decrease the height of several tracks to get a better overview of your project.

- To change the height of an individual track, click its lower border in the track list and drag up or down.
- To change the height of all tracks simultaneously, hold down **Ctrl/Cmd**, click the lower border of one track, and drag up or down.
- To set the number of tracks to view in the **Project** window, use the track zoom menu.
- To set the track height automatically when you select a track, click **Edit > Enlarge Selected Track**.

RELATED LINKS

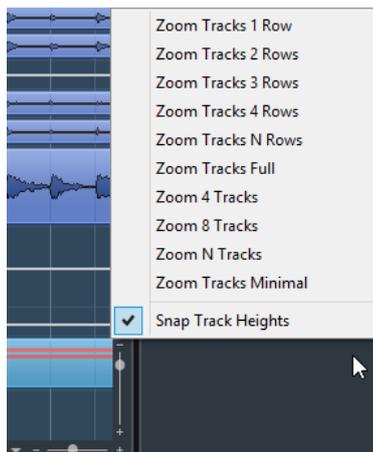
[Track Zoom Menu](#) on page 161

[Track Control Settings](#) on page 98

Track Zoom Menu

The track zoom menu allows you to set the number of tracks and the track height in the **Project** window.

- To open the track zoom menu in the lower right of the **Project** window, click the arrow button above the vertical zoom control.



The following options are available:

Zoom Tracks x Rows

Zooms all track heights to show the specified number of rows.

Zoom Tracks Full

Zooms all tracks to fit in the active **Project** window.

Zoom x Tracks

Zooms the specified number of tracks to fit in the active **Project** window.

Zoom N Tracks

Allows you to set the number of tracks to fit in the active **Project** window.

Zoom Tracks Minimal

Zooms all track heights to the minimum size.

Snap Track Heights

Changes the track height in fixed increments when you resize it.

Selecting Tracks

- To select a track, click on it in the track list.
- To select several tracks, **Ctrl/Cmd**-click several tracks.
- To select a continuous range of tracks, **Shift**-click the first and last track in a continuous range of tracks.

Selected tracks are highlighted in the track list.

RELATED LINKS

[Track Selection follows Event Selection](#) on page 1000

[Scroll to selected Track](#) on page 1005

[Select Channel/Track on Solo](#) on page 1005

[Select Channel/Track on Edit Settings](#) on page 1005

Selecting Tracks with Arrow Keys

You can select tracks and events with the **Up Arrow** key or the **Down Arrow** key on the computer keyboard. However, you can make the **Up Arrow** key and the **Down Arrow** key exclusively available for selecting tracks.

- To make the **Up Arrow** key and the **Down Arrow** key exclusively available for selecting tracks, open the **Preferences** dialog, select **Editing**, and activate **Use Up/Down Navigation Commands for selecting Tracks only**.

The following applies:

- If this option is deactivated and no event/part is selected in the **Project** window, the **Up Arrow** key and the **Down Arrow** key are used to step through the tracks in the track list.
- If this option is deactivated and an event/part is selected in the **Project** window, the **Up Arrow** key and the **Down Arrow** key still step through the tracks in the track list – but on the selected track, the first event/part will automatically be selected as well.
- If this option is activated, the **Up Arrow** key and the **Down Arrow** key are only used to change the track selection – the current event/part selection in the **Project** window will not be altered.

Duplicating Tracks

You can duplicate a track with all contents and channel settings.

PROCEDURE

- Select **Project > Duplicate Tracks**.
-

RESULT

The duplicated track appears below the original track.

Disabling Tracks

You can disable audio, instrument, MIDI, and sampler tracks that you do not want to play back or process at the moment. Disabling a track zeroes its output volume and shuts down all disk activity and processing for the track.

PROCEDURE

- Right-click in the track list and select **Disable Track** from the context menu.

RESULT

The track color changes and the corresponding channel in the **MixConsole** is hidden.

To enable a disabled track and restore all channel settings, right-click in the track list and select **Enable Track**.

Organizing Tracks in Folder Tracks

You can organize your tracks in folders by moving tracks into folder tracks. This allows you to perform editing on several tracks as one entity. Folder tracks can contain any type of track including other folder tracks.

- To create a folder track, open the **Project** menu and in the **Add Track** submenu select **Folder**.
- To create new folder track and move all selected tracks into it, open the **Project** menu and from the **Track folding** submenu select **Move Selected Tracks To New Folder**.
- To move tracks into a folder, select them and drag them into the folder track.
- To remove tracks from a folder, select them and drag them out of the folder.
- To hide/show tracks in a folder, click the **Expand/Collapse Folder** button of the folder track.
- To hide/show data on a folder track, open the context menu for the folder track and select an option from the **Show Data on Folder Tracks** submenu.
- To mute/solo all tracks in a folder track, click the **Mute** or **Solo** button for the folder track.

NOTE

Hidden tracks are played back as usual.

RELATED LINKS

[Group Editing Mode \(Cubase Pro only\)](#) on page 198

Moving Tracks to Folder Tracks

You can move your tracks to folder tracks to organize them and to perform editing on several tracks as one entity. You can move any type of track including other folder tracks to folder tracks.

PROCEDURE

- Select **Project > Track Folding > Move Selected Tracks to New Folder**.
-

RESULT

This creates a new folder and moves all selected tracks into it.

NOTE

You can also drag and drop tracks into or out of a folder track.

RELATED LINKS

[Folder Tracks](#) on page 138

[Folder Track Controls](#) on page 139

Handling Overlapping Audio

The basic rule for audio tracks is that each track can only play back a single audio event at a time. If two or more events overlap, you will only hear one of them: the one that is actually visible (e. g. the last lap of a cycle recording).

If you have a track with overlapping (stacked) events/regions, use one of the following methods to select the event/region that is played back:

- Open the context menu for the audio event in the event display and select the desired event or region from the **To Front** or **Set to Region** submenu.
The available options depend on whether you performed a linear or a cycle recording and the record mode you used. When recording audio in cycle mode, the recorded event is divided in regions, one for each take.
- Use the handle in the middle of a stacked event and select an entry from the pop-up menu that appears.
- Activate **Show Lanes** and click the desired take.

RELATED LINKS

[Working with Lanes](#) on page 166

Track Folding

You can show, hide, or invert tracks that are displayed in the **Project** window event display. This allows you to divide the project into several parts by creating several folder tracks for the different project elements and showing/hiding their contents by selecting a menu function or using a key command. You can also fold in automation tracks this way.

- To open the **Track Folding** menu, select **Project > Track Folding**.

The following options are available:

Toggle Selected Track

Reverses the fold state of the selected track.

Fold Tracks

Folds in all open folder tracks in the **Project** window.

NOTE

The behavior of this function depends on the **Deep Track Folding** setting in the **Preferences** dialog.

Unfold Tracks

Unfolds all folder tracks in the **Project** window.

NOTE

The behavior of this function depends on the **Deep Track Folding** setting in the **Preferences** dialog.

Flip Fold States

Flips the fold states of the tracks in the **Project** window. This means that all tracks that were folded in will be unfolded and all unfolded tracks will be folded in, respectively.

Move Selected Tracks to New Folder

Moves all selected tracks to the folder track. This menu option is available if at least one folder track is available.

NOTE

You can assign key commands for these menu options in the **Key Commands** dialog in the **Project** category.

The following option also affects the track folding behavior:

Deep Track Folding

To activate this option, open the **Preferences** dialog and select **Editing > Project & MixConsole**.

If this option is activated, any folding settings that you make on the **Track Folding** submenu of the **Project** menu also affect the subelements of the tracks. For example, if you fold in a folder track that contains 10 audio tracks, of which 5 have several open automation tracks, all these audio tracks within the folder track will also be folded in.

How Events are Displayed on Folder Tracks

Closed folder tracks can display data of the contained audio, MIDI, and instrument tracks as data blocks or as events.

When you close folder tracks, the contents of the contained tracks are displayed as data blocks or events. Depending on the folder track height, the display of the events can be more or less detailed.

Modifying Event Display on Folder Tracks

You can modify the event display on folder tracks.

PROCEDURE

1. Right-click the folder track.
2. On the context menu, select **Show Data on Folder Tracks**.

You have the following options:

- **Always Show Data**
If this option is activated, data blocks or event details are always displayed.
- **Never Show Data**
If this option is activated, nothing is displayed.
- **Hide Data When Expanded**

If this option is activated, the display of events is hidden when you open folder tracks.

- **Show Event Details**

If this option is activated, event details are displayed. If this option is deactivated, data blocks are displayed.

NOTE

To change these settings, open the **Preferences** dialog and select **Event Display > Folders**.

RELATED LINKS

[Event Display - Folders](#) on page 1009

Working with Lanes

The descriptions in the following paragraphs focus on cycle recordings with takes. However, you can also apply lane operations and comping methods on overlapping events or parts that you assemble on one track.

If you perform a cycle recording in the **Keep History** or **Cycle History + Replace** modes (audio) or in the **Stacked** or **Mix-Stacked** modes (MIDI), the recorded cycle laps are shown on the track with the last recorded take active and on top.



The **Show Lanes** mode gives you a good overview of all your takes. If you activate the **Show Lanes** button, the recorded takes are shown on separate lanes.



Show Lanes button

Lanes are handled differently, depending on whether you work with audio or MIDI:

Audio

As each audio track can only play back one single audio event at a time, you only hear the take that is activated for playback, for example, the last lap of a cycle recording.

MIDI

Overlapping MIDI takes (parts) can be played back simultaneously. If you recorded in **Mix-Stacked** mode, you hear all takes from all cycle laps.

Lanes can be reordered, sized, and zoomed like regular tracks.

To solo a lane, you can activate the **Solo** button for it. This allows you to hear the lane in the project context. If you want to hear the take without the project context, you also have to activate the main track's **Solo** button.

Assembling a Perfect Take

You can play back, cut, and activate takes to combine the best parts of your recording in a final take.

PROCEDURE

1. Select the **Comp** tool or the **Object Selection** tool.
2. Bring a take to front to select it for playback, and listen to it.
3. Audition different takes to compare them in more detail.
4. If necessary, cut your takes into smaller sections, create new ranges, and bring them to front.
5. Proceed until you are satisfied with the result.

AFTER COMPLETING THIS TASK

After assembling your perfect take, you can improve your take.

- To automatically resolve overlaps and remove empty lanes, right-click the track and select **Clean Up Lanes**.

For audio, proceed as follows:

- Apply auto fades and crossfades to the comped takes.
- To put all takes on a single lane, and remove all takes in the background, select all takes and select **Audio > Advanced > Delete Overlaps**.
- To create a new and continuous event of all selected takes, select **Audio > Bounce Selection**.

For MIDI, proceed as follows:

- Open your takes in a MIDI editor to perform fine adjustments like removing or editing notes.
- To create a new and continuous part of all selected takes that is placed on a single lane, select all takes and select **MIDI > Bounce MIDI**.
- To create a new part and place it on a new track, select **MIDI > Merge MIDI in Loop**.

Finally, clean up the lanes as follows:

- Right-click a track and select **Create Tracks from Lanes**.
The lane is converted into a new track.

Assembling Operations

Unless it is clearly stated, all operations can be performed in the **Project** window and in the **Audio Part Editor**. Snap is taken into account, and all operations can be undone.

To assemble a perfect take, you can use the **Comp** tool, the **Object Selection** tool, or the **Range Selection** tool.

- The **Comp** tool modifies all takes on all lanes simultaneously.
This is useful if the recorded takes have the same start and end positions.
- The **Object Selection** tool and the **Range Selection** tool affect single takes on individual lanes.

If this is not what you want, you can either perform your edits on the main track or use the **Comp** tool.

NOTE

If you assemble stacked events on an audio track, open the **Preferences** dialog, select **Editing > Audio**, and deactivate **Treat Muted Audio Events like Deleted**.

The following operations can be performed:

Assembling Operations

Operation	Comp tool	Object Selection/Range Selection tool
Select (Project window only)	Hold down Shift and click on a take.	Click on a take.
Bring to front	Click on a take. Click twice to toggle.	Position the mouse pointer over the middle of the lower border of a take until it changes to a Comp symbol, and click. Click twice to toggle. For MIDI this mutes/unmutes a take.
Comp (create a new range and bring it to front, Project window only)	Click and drag on a lane. All takes are cut at the range start and end. If the audio takes are adjacent without gaps or fades and the material itself matches, the takes are merged within the range.	-
Audition	Press Ctrl/Cmd to activate the Speaker tool and click at the position where you want playback to start.	See left.
Move	Click and drag on the main track.	Click and drag on any lane.
Resize	Drag the resize handles. All takes with the same start and end positions are affected. Resizing is constrained to the end or start of the adjacent takes. This ensures that you do not create overlaps accidentally.	Drag the resize handles.
Correct timing (Slip Event)	Select a take, hold down Alt-Shift (the tool modifier for Slip Event) and drag with the mouse.	See left.

Operation	Comp tool	Object Selection/Range Selection tool
Cut	Alt -click on a take. If you cut a MIDI part and the cut position intersects one or several MIDI notes, the result depends on the Split MIDI Events option. To access this option, open the Preferences dialog and select Editing > MIDI .	See left.
Adjust cuts	Position the mouse pointer over a cut and drag to the left or to the right.	See left.
Glueing cuts	Bring a new range to front.	Select a range spanning all the cuts that you want to glue, and double-click.

RELATED LINKS

[Splitting Events](#) on page 194

Defining the Track Time Base

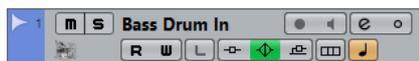
The time base of a track determines if the events on a track are positioned to bars and beats (musical time base) or to the timeline (linear time base). Changing the playback tempo affects only the time position of events on tracks with a musical time base.

PROCEDURE

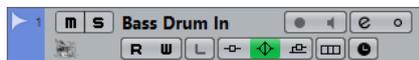
- In the track list, click **Toggle Timebase**  to change the time base.

RESULT

Musical time base is indicated by a note symbol, linear time base is indicated by a clock symbol.



Musical track time base



Time linear track time base

NOTE

Switching between linear and musical time base results in a very small loss of positioning precision. Therefore you should avoid switching repeatedly between the two modes.

RELATED LINKS

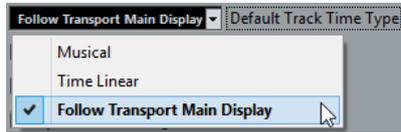
[Editing Tempo and Time Signature](#) on page 863

Defining the Default Track Time Base (Cubase Pro only)

You can specify the default track time type for new tracks (audio, group/FX, MIDI, and marker tracks).

PROCEDURE

1. Open the **Preferences** dialog and select **Editing**.
2. Open the **Default Track Time Type** pop-up menu and select a default track time type.



RESULT

If you selected **Follow Transport Main Display**, the primary time format setting on the Transport panel is used. When this is set to **Bars+Beats**, tracks with musical time base are added. When this is set to any of the other options (Seconds, Timecode, Samples, etc.), all new tracks use linear time base.

RELATED LINKS

[Default Track Time Type](#) on page 999

TrackVersions

TrackVersions allow you to create and manage multiple versions of events and parts on the same track.

TrackVersions are available for audio, MIDI, and instrument tracks. You can also have TrackVersions of the chord track, the signature track, and the tempo track.

TrackVersions are useful for the following tasks:

- Starting new recordings from scratch.
- Comparing different takes and comps.
- Managing takes that were recorded in a multi-track recording.

NOTE

TrackVersions are not available for automation tracks.

TrackVersions are included in track archives and project backups.

The TrackVersion key commands can be found in the **TrackVersions** category of the **Key Commands** dialog.

TrackVersions Pop-Up Menu

The **TrackVersions** pop-up menu is available for all track types that support TrackVersions. It contains the most important functions for managing TrackVersions and a TrackVersions list.

To open the **TrackVersions** pop-up menu for a track, click the arrow to the right of the track name.



The following options are available:

TrackVersion List

Lists all TrackVersions of the track for which you opened the **TrackVersions** pop-up menu and allows you to activate a TrackVersion.

New Version

Creates a new, empty TrackVersion for the selected tracks.

Duplicate Version

Creates a copy of the active TrackVersion for the selected tracks.

Rename Version

Opens a dialog that allows you to change the TrackVersion name for the selected tracks.

Delete Version

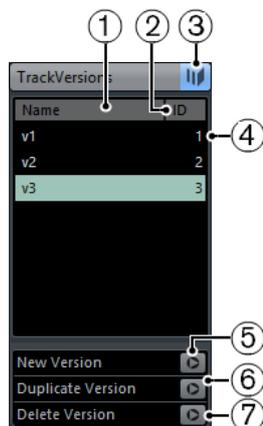
Deletes the active TrackVersion for the selected tracks.

Select Tracks with Same Version ID

Selects all tracks that have a TrackVersion with the same ID.

TrackVersions Section

The **TrackVersions** section in the **Inspector** allows you to view and manage TrackVersions for a selected track. It is available for audio tracks, MIDI tracks, instrument tracks, and the chord track.



To open the **TrackVersions** section for a track, select the track, and in the **Inspector**, click the **TrackVersions** section.

- 1. Name column**
Shows the version name. Double-click to change it. The name will be changed for all selected tracks.
- 2. ID column**
Shows the TrackVersion ID.
- 3. Track Version Indicator**
Indicates that more than one TrackVersion exists.
- 4. Track Version list**
Lists all TrackVersions and allows you to activate one of them for all selected tracks.
- 5. New Version**
Creates a new, empty TrackVersion for all selected tracks.
- 6. Duplicate Version**

Creates a copy of the active TrackVersion for all selected tracks.

7. Delete Version

Deletes the active TrackVersion for all selected tracks. This function is only available if the track has more than one TrackVersion.

Creating New TrackVersions

You can create new, empty TrackVersions for selected tracks.

PROCEDURE

1. In the track list, select the tracks for which you want to create a new TrackVersion.
2. Select **Project > TrackVersions > New Version**.

NOTE

You can also use the **TrackVersions** section in the **Inspector** (only available for audio tracks, MIDI tracks, instrument tracks, and the chord track) or the **TrackVersions** pop-up menu in the track list to create a new TrackVersion.

RESULT

The event display shows a new, empty TrackVersion. Events of previous TrackVersions are hidden. The track list shows a default version name.

TrackVersion IDs

All TrackVersions are automatically assigned an ID. TrackVersions that are created together get the same TrackVersion ID and can be selected together.

In the **TrackVersions** section in the **Inspector**, the TrackVersion ID is shown in the **ID** column of the TrackVersion list.

In the track list, you can open the **TrackVersions** pop-up menu to see the TrackVersion ID.

Selecting Tracks by TrackVersion ID

You can simultaneously select all tracks that share the same TrackVersion ID.

PROCEDURE

1. Activate the TrackVersion.
 2. Select **Project > TrackVersions > Select Tracks with same Version ID**.
-

RESULT

All tracks that have TrackVersions with the same ID are selected.

Assigning a Common ID

TrackVersions on different tracks that were not created together have different TrackVersion IDs. TrackVersions with different IDs cannot be activated together. To do this, you must assign a new version ID to these tracks.

PROCEDURE

1. Select the tracks and activate the TrackVersions to which you want to assign a common version ID.

2. Select **Project > TrackVersions > Assign Common Version ID**.
-

RESULT

A new ID is assigned to all active TrackVersions on the selected tracks. The tracks are now marked as belonging together. You can now activate them together.

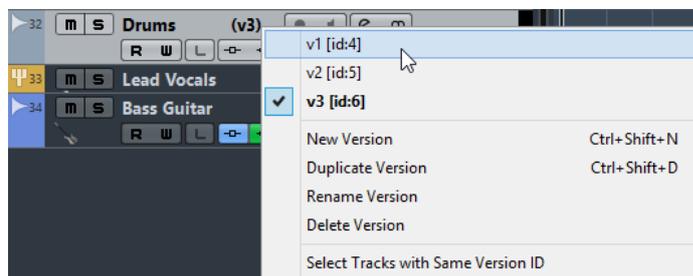
Active TrackVersion

If you created more than one TrackVersion for a track, you can show the events of a specific TrackVersion in the event display. This process is referred to as activating TrackVersions.

Activating TrackVersions

PROCEDURE

1. Click the arrow to the right of the track name to open the **TrackVersions** pop-up menu.



2. Select the TrackVersion that you want to activate.
-

RESULT

The selected version is activated and its events are shown in the event display.

NOTE

If you work with audio tracks, MIDI tracks, instrument tracks, or the chord track, you can also use the **TrackVersions Inspector** to activate a TrackVersion.

Activating TrackVersions on Multiple Tracks

You can simultaneously activate TrackVersions on multiple tracks if these TrackVersions share the same ID.

PROCEDURE

1. Select all tracks for which you want to activate a specific TrackVersion.
 2. Click the arrow to the right of the track name to open the **TrackVersions** pop-up menu.
 3. Select the TrackVersion that you want to activate from the list.
-

RESULT

The selected TrackVersion is activated for all selected tracks, and the corresponding events are shown in the event display.

NOTE

If you work with audio tracks, MIDI tracks, instrument tracks, or the chord track, you can also use the **TrackVersions Inspector** to activate a TrackVersion.

Duplicating TrackVersions

You can duplicate a TrackVersion by creating a new TrackVersion that contains a copy of the active TrackVersion.

PROCEDURE

1. In the track list, select the tracks and activate the TrackVersion that you want to duplicate.
2. Select **Project > TrackVersions > Duplicate Version**.
In the event display, a duplicate TrackVersion is displayed. In the track list, a default version name for the duplicate is shown.

NOTE

You can also use the **TrackVersions Inspector** for audio tracks, MIDI tracks, instrument tracks, and chord tracks or the **TrackVersions** pop-up menu in the track list to duplicate a TrackVersion.

Deleting TrackVersions

PROCEDURE

1. Select the tracks and activate the TrackVersions that you want to delete.
2. Select **Project > TrackVersions > Delete Version**.

NOTE

You can also use the **TrackVersions Inspector** for audio tracks, MIDI tracks, instrument tracks, and chord tracks or the **TrackVersions** pop-up menu in the track list to delete the active TrackVersion for selected tracks.

Copying and Pasting Selection Ranges Between TrackVersions

You can copy and paste ranges between different TrackVersions, even across multiple tracks.

PREREQUISITE

You have at least 2 TrackVersions.

PROCEDURE

1. Select the **Range Selection** tool.
2. Select a range of the TrackVersion that you want to copy.
3. Select **Edit > Copy**.
4. Activate the TrackVersion into which you want to insert the copied range.
5. Select **Edit > Paste**.

RESULT

The copied range from the first TrackVersion is pasted to the second TrackVersion at the exact same position.

NOTE

If you want to perform more complicated comping tasks, we recommend to select **Project > TrackVersions > Create Lanes from Versions** and proceed with the **Comp** tool.

Copying and Pasting Selected Events between TrackVersions

You can copy and paste selected events between different TrackVersions, even across multiple tracks.

PREREQUISITE

You have at least 2 TrackVersions, and you have split the corresponding events with the **Cut** tool, for example.

PROCEDURE

1. Select the **Object Selection** tool.
2. Select the events that you want to copy.
3. Select **Edit > Copy**.
4. Activate the TrackVersion into which you want to insert the copied events.
5. Select **Edit > Functions > Paste at Origin**.
This ensures that the events are inserted at the exact same position.

RESULT

The copied events from the first TrackVersion are pasted to the second TrackVersion at the exact same position.

TrackVersion Names

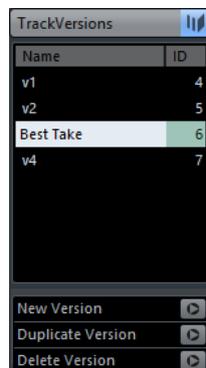
Each TrackVersion has a default TrackVersion name.

If more than one version is available for the track, the TrackVersion name is shown in the track list and in the **TrackVersions** section in the **Inspector**. By default, TrackVersions are named v1, v2, etc. However, you can rename each TrackVersion to your liking.

Renaming a TrackVersion

PROCEDURE

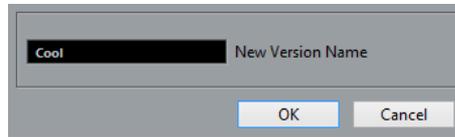
- In the **TrackVersions** section in the **Inspector**, double-click the TrackVersion name and enter a new name.
The name is changed. If the available space in the track list is too small, the name is abbreviated automatically.



Renaming TrackVersions on Multiple Tracks

PROCEDURE

1. Activate all TrackVersions that you want to rename, and select the corresponding tracks.
2. Select **Project > TrackVersions > Rename Version**.
3. Enter a new TrackVersion name and click **OK**.



RESULT

In the track list, the new TrackVersion name is shown.



NOTE

If you want to assign the same ID to TrackVersions, select **Project > TrackVersions > Assign Common Version ID**.

TrackVersions vs. Lanes

TrackVersions and lanes are individual features that complement each other. Every TrackVersion can have its own set of lanes.

Creating Lanes from TrackVersions

If your project contains TrackVersions and you want to continue working with lanes, using the **Comp** tool, for example, you can create lanes from TrackVersions.

PROCEDURE

1. Select the tracks for which you want to create lanes.
 2. Select **Project > TrackVersions > Create Lanes from Versions**.
A new TrackVersion named **Lanes from Version** is added. This TrackVersion contains all TrackVersions on separate lanes. The original TrackVersions are kept. Lanes that you create from MIDI TrackVersions are muted.
 3. In the track list or in the **Inspector**, activate the **Show Lanes** button for the track.
 4. On the **Project** window toolbar, activate the **Comp** tool and continue as usual.
-

Creating TrackVersions from Lanes

If your project contains lanes and you want to continue working with the TrackVersion functions, you can create TrackVersions from lanes.

PROCEDURE

1. Select the tracks for which you want to create TrackVersions.
If you only want to convert specific lanes, select these lanes.
2. Select **Project > TrackVersions > Create Versions from Lanes**.

RESULT

New TrackVersions are added, one for each separate lane. The original lanes are kept. Any crossfades that you have created between different lanes are discarded.

Track Presets

Track presets are templates that can be applied to newly created or existing tracks of the same type.

You can create them from virtually all track types (audio, MIDI, instrument, sampler, group, FX, VST instrument return, input, and output channels). They contain sound and channel settings, and allow you to quickly browse, preview, select, and change sounds, or reuse channel settings across projects.

Track presets are organized in the MediaBay. There, you can categorize them with attributes.

Audio Track Presets

Track presets for audio tracks, group tracks, FX tracks, VST instrument channels, input channels, and output channels include all settings that define the sound.

You can use the factory presets as a starting point for your own editing and save the audio settings that you optimized for an artist that you often work with as a preset for future recordings.

The following data is saved in audio track presets:

- Insert effects settings (including VST effect presets)
- EQ settings
- Volume and pan
- Input gain and phase

NOTE

To access the track presets functions for input and output channels, activate the **Write** buttons for input and output channels in the MixConsole. This creates input and output channel tracks in the track list.

Instrument Track Presets

Instrument track presets offer both MIDI and audio features and are the best choice when handling sounds of simple, mono-timbral VST instruments.

Use instrument track presets for auditioning your tracks or saving your preferred sound settings, for example. You can also extract sounds from instrument track presets for use in instrument tracks.

The following data is saved in instrument track presets:

- Audio insert effects
- Audio EQ
- Audio volume and pan
- Audio input gain and phase
- MIDI insert effects
- MIDI track parameters
- Input Transformer settings
- The VST instrument used for the track
- Staff settings
- Color settings
- Drum map settings

MIDI Track Presets

You can use MIDI track presets for multi-timbral VST instruments. You can also use them for external instruments.

When creating MIDI track presets you can either include the channel or the patch.

- To ensure that saved MIDI track presets for external instruments will work again with the same instrument, install the instrument as a MIDI device, see the separate PDF document **MIDI Devices**.

The following data is saved in MIDI track presets:

- MIDI modifiers (Transpose, etc.)
- MIDI insert effects
- Output and Channel or Program Change
- Input Transformer settings
- Volume and pan
- Staff settings
- Color settings
- Drum map settings

Multi-Track Presets

You can use multi-track presets, for example, when recording setups that require several microphones (a drum set or a choir, where you always record under the same conditions) and you have to edit the resulting tracks in a similar way. Furthermore, they can be used when working with layered tracks, where you use several tracks to generate a certain sound instead of manipulating only one track.

If you select more than one track when creating a track preset, the settings of all selected tracks are saved as one multi-track preset. Multi-track presets can only be applied if the target tracks are of the same type, number, and sequence as the tracks in the track preset, therefore, they should be used in recurring situations with similar tracks and settings.

Sampler Track Presets

You can use sampler track presets to re-use created sounds in later projects or newly created sampler tracks.

The following data is saved in sampler track presets:

- Audio insert effects
- Audio EQ
- Audio volume and pan
- Audio input gain and phase
- MIDI insert effects
- MIDI track parameters
- Input Transformer settings
- Color settings

VST Presets

VST instrument presets behave like instrument track presets. You can extract sounds from VST presets for use in instrument tracks.

The following data is saved in VST instrument presets:

- VST instrument
- VST instrument settings

NOTE

Modifiers, inserts, and EQ settings are not saved.

VST effect plug-ins are available in VST 3 and VST 2 format.

NOTE

In this manual, VST presets stands for VST 3 instrument presets, unless stated otherwise.

Pattern Banks

Pattern banks are presets that are created for the Beat Designer MIDI effect.

They behave much like track presets.

RELATED LINKS

[Previewing Pattern Banks](#) on page 544

[Track Presets](#) on page 177

Creating a Track Preset

You can create a track preset from a single track or from a combination of tracks.

PROCEDURE

1. In the **Project** window, select one or more tracks.
2. In the track list, right-click one of the selected tracks and select **Save Track Preset**.
3. In the **New Preset** section, enter a name for the new preset.

NOTE

You can also define attributes for the preset.

4. Click **OK** to save the preset and exit the dialog.
-

RESULT

Track presets are saved within the application folder in the Track Presets folder. They are saved in default subfolders named according to their track type: audio, MIDI, instrument, and multi.

RELATED LINKS

[Attribute Inspector](#) on page 549

Creating a Sampler Track Preset

You can create a sampler track preset from a sampler track or you can use the **Sampler Control** toolbar.

PROCEDURE

1. In the **Sampler Control** toolbar, click **Preset Management** .
 2. Click **Save Track Preset**.
 3. In the **Save Track Preset** dialog, type in a name for the new preset.
 4. Click **OK** to save the preset and exit the dialog.
-

RESULT

The new sampler track preset is saved. It is displayed in the **Preset Name** field on the info line. Sampler track presets are saved within the application folder in the sampler track presets folder.

RELATED LINKS

[Creating a Track Preset](#) on page 179

Applying Track Presets

When you apply a track preset, all the settings that are saved in the preset are applied.

Track presets can be applied to tracks of their own type only. The only exception are instrument tracks: for these, VST presets are also available.

NOTE

- Once a track preset is applied, you cannot undo the changes. It is not possible to remove an applied preset from a track and return to the previous state. If you are not satisfied with the track settings, you have to either edit the settings manually or apply another preset.
 - Applying VST presets to instrument tracks leads to removal of modifiers, MIDI inserts, inserts, or EQs. These settings are not stored in VST presets.
-

Loading Track, VST, or Sampler Track Presets

PROCEDURE

1. In the **Project** window, select a track.
2. Do one of the following:
 - In the **Inspector**, click **Load Track Preset**.
 - In the track list, right-click the track and select **Load Track Preset**.

- In the **Sampler Control** toolbar, click the preset management button next to the preset name field and select **Load Track Preset**.
3. In the preset browser, select a track, VST, or sampler track preset.
 4. Double-click the preset to load it.
-

RESULT

The preset is applied.

NOTE

You can also drag and drop presets from the **MediaBay**, the File Explorer/Mac OS Finder onto a track of the same type.

RELATED LINKS

[Filters Section](#) on page 545

Loading Multi-Track Presets

PROCEDURE

1. In the **Project** window, select several tracks.

NOTE

Multi-track presets can only be applied if track type, number, and sequence are identical for the selected tracks and the track preset.

2. In the track list, right-click the track and select **Load Track Preset**.
 3. In the preset browser, select a multi-track preset.
 4. Double-click the preset to load it.
-

RESULT

The preset is applied.

Loading Inserts and EQ from Track Presets

Instead of loading complete track presets, you can also apply insert or equalizer settings from track presets.

PROCEDURE

1. Select a track, open the **Inspector** or the **Channel Settings** window, and click the **VST Sound** button on the **Inserts** or **Equalizers** section.
 2. Select **From Track Preset**.
 3. In the preset browser, select a track preset.
 4. Double-click the preset to load the settings.
-

Extracting the Sound from an Instrument Track or VST Preset

For instrument tracks, you can extract the sound of an instrument track preset or VST preset.

PROCEDURE

1. Select the instrument track to which you want to apply a sound.
2. In the **Inspector**, click **VST Sound**.

3. In the preset browser, select an instrument track preset or VST preset.
 4. Double-click the preset to load the settings.
-

RESULT

The VST instrument and its settings (but no inserts, EQs, or modifiers) on the existing track are overwritten with the data of the track preset. The previous VST instrument for this instrument track is removed and the new VST instrument with its settings is set up for the instrument track.

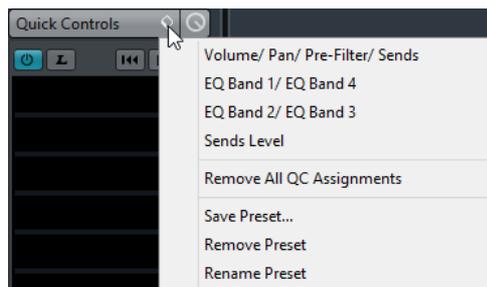
Track Quick Control Presets

For audio, instrument, MIDI, FX, and group tracks, you can save and load your own Quick Control assignments as presets or use the factory presets.

Saving/Loading Track Quick Control Assignments as Presets

PROCEDURE

1. In the **Inspector** for your track, open the **Quick Controls** section.
For instrument tracks, the track quick controls are set to the 8 default VST quick controls of the loaded instrument by default.
2. Click **Preset Management** in the top right corner of the **Quick Controls** section and select one of the presets.



The Track Quick Control assignment changes and gives you access to the channel parameters.

NOTE

You can also make your own assignments and save them as presets and delete, rename, or reset the presets to the default assignments.

Parts and Events

Parts and events are the basic building blocks in Cubase.

Events

In Cubase, most event types can be viewed and edited on their specific tracks in the **Project** window.

Events can be added by importing or recording.

RELATED LINKS

[Audio Events](#) on page 183

[MIDI Events](#) on page 186

Audio Events

Audio events are created automatically when you record or import audio in the **Project** window.

You can view and edit audio events in the **Project** window and in the **Sample Editor**.

An audio event triggers the playback of the corresponding audio clip. By adjusting the **Offset** and the **Length** values of the event, you can determine which section of the audio clip is played back. The audio clip itself remains unchanged.

RELATED LINKS

[Project Window](#) on page 42

[Sample Editor](#) on page 428

[Audio Files and Audio Clips](#) on page 184

[Basic Recording Methods](#) on page 223

Creating Audio Events

PROCEDURE

- Do one of the following:
 - Record some audio.
 - Select **File > Import > Audio File** to import an audio file from your hard disk or any external storage device.
 - Select **File > Import > Audio CD** to import an audio file from an audio CD.
 - Select **File > Import > Audio from Video File** to import the audio from a video file on your hard disk or any external storage device.
 - Drag an audio file from the **MediaBay**, the **Audio Part Editor**, the **Sample Editor** or the **Find Media** window, and drop it in the event display.
 - Copy an event from a different Cubase project and paste it in the event display.
-

RELATED LINKS

- [Basic Recording Methods](#) on page 223
- [Importing audio](#) on page 956
- [Importing audio CD tracks](#) on page 957
- [Importing Audio from video files](#) on page 960
- [MediaBay](#) on page 530
- [Audio Part Editor](#) on page 487
- [Sample Editor](#) on page 428
- [Find Media Window](#) on page 520

Creating New Files From Events

An audio event plays a section of an audio clip, which in turn refers to one or more audio files on the hard disk. However, you can create a new file that consists only of the section that is played by the event.

PROCEDURE

1. Select one or several audio events.
2. Set up fade in, fade out, and event volume.
These settings will be applied to the new file.
3. Select **Audio > Bounce Selection**.
You are asked whether you want to replace the selected event or not.
4. Do one of the following:
 - To create a new file that only contains the audio in the original event, click **Replace**.
 - To create a new file and add a clip for the new file to the **Pool**, click **No**.

RESULT

If you clicked **Replace**, a clip for the new file is added to the **Pool**, and the original event is replaced by a new event playing the new clip.

If you clicked **No**, the original event is not replaced.

NOTE

You can also apply the **Bounce Selection** function to audio parts. In that case, the audio from all events in the part is combined to a single audio file. If you select **Replace** when asked, the part is replaced with a single audio event playing a clip of the new file.

RELATED LINKS

- [Event-Based Fades](#) on page 255

Audio Files and Audio Clips

In Cubase, audio editing and processing are non-destructive.

When you edit or process audio in the **Project** window, the audio file on the hard disk remains untouched. Instead, your changes are saved to an audio clip that is automatically created on import or during recording, and that refers to the audio file. This allows you to undo changes or revert to the original version.

If you apply processing to a specific section of an audio clip, a new audio file that contains only this section is created. The processing is applied to the new audio file only and the audio clip is automatically adjusted, so that it refers both to the original file and to the new, processed file. During playback, the program will switch between the original file and the processed file at the

correct positions. You will hear this as a single recording, with processing applied to one section only.

This allows you to undo processing at a later stage, and to apply different processing to different audio clips that refer to the same original file.

You can view and edit audio clips in the **Pool**.

RELATED LINKS

[Pool](#) on page 511

[Audio Regions](#) on page 185

[Replacing Clips in Events](#) on page 185

Replacing Clips in Events

You can replace the clips in audio events.

PROCEDURE

- Do one of the following:
 - Hold down **Shift**, drag an audio file from the File Explorer/Mac OS Finder, and drop it on the event.
 - Click a clip in the **Pool**, hold down **Shift**, and drop it on the event.

RESULT

The clip in the event is replaced. However, the event edits remain unchanged. If the new clip is shorter than the replaced clip, the length of the event is adapted. If the new clip is longer than the replaced clip, the length of the event stays the same.

RELATED LINKS

[Inserting Clips into a Project Via Drag and Drop](#) on page 516

Audio Regions

Cubase allows you to create audio regions within audio clips to mark important sections in the audio.

You can view audio regions in the **Pool**. You can create and edit them in the **Sample Editor**.

NOTE

If you want to use one audio file in different contexts, or if you want to create several loops from one audio file, convert the corresponding regions of the audio clip to events and bounce them into separate audio files. This is necessary since different events that refer to the same clip access the same clip information.

RELATED LINKS

[Pool](#) on page 511

[Audio Regions](#) on page 185

[Regions List](#) on page 444

Region Operations

Regions are sections within a clip.

Regions are best created and edited in the **Sample Editor**. However, to access the following options, select **Audio > Advanced**.

Event or Range as Region

This function is available when one or several audio events or selection ranges are selected. It creates a region in the corresponding clip, with the start and end position of the region determined by the start and end position of the event or selection range within the clip.

Events from Regions

This function is available if you have selected an audio event whose clip contains regions within the boundaries of the event. The function will remove the original event and replace it with events positioned and sized according to the regions.

RELATED LINKS

[Creating Audio Events from Regions](#) on page 446

MIDI Events

MIDI events are created automatically when you record or import MIDI in the **Project** window.

The **In-Place Editor** allows you to view and edit MIDI events in the **Project** window. You can also view and edit MIDI events in the **Key Editor**, the **Drum Editor**, **List Editor**, or the **Score Editor**.

RELATED LINKS

[Project Window](#) on page 42

[In-Place Editor](#) on page 757

[Key Editor](#) on page 678

[Drum Editor](#) on page 721

[Basic Score Editor \(Cubase Artist only\)](#) on page 707

[Basic Recording Methods](#) on page 223

Creating MIDI Events

PROCEDURE

- Do one of the following:
 - Record MIDI.
 - Select **File > Import > MIDI File** to import a MIDI file from your hard disk.
 - Drag a MIDI file from the File Explorer/Mac OS Finder, from one of the MIDI editors, or from the **MediaBay**, and drop it in the event display.
 - Copy an event from a different Cubase project and paste it in the event display.

RELATED LINKS

[Basic Recording Methods](#) on page 223

[Importing MIDI files](#) on page 967

[MIDI Editors](#) on page 671

[MediaBay](#) on page 530

Parts

Parts are containers for MIDI or audio events, and for tracks.

RELATED LINKS

[Audio Parts](#) on page 187

[MIDI Parts](#) on page 187

[Folder Parts](#) on page 187

Audio Parts

Audio parts are containers for audio events. If you want to treat several audio events as one unit in the **Project** window, you can convert them to a part.

You can create audio parts in the following ways:

- Select the **Draw** tool and draw on the audio track.
- Press **Alt**, select the **Object Selection** tool, and draw on the audio track.
- Select the **Object Selection** tool and double-click on the audio track, between the left and right locator.
- Select several audio events on an audio track and select **Audio > Events to Part**.

NOTE

To make the events appear as independent objects on the track again, select the part and select **Audio > Dissolve Part**.

MIDI Parts

A MIDI part is automatically created when you record. It contains the recorded events.

However, you can also create empty MIDI parts in the following ways:

- Select the **Draw** tool and draw on the MIDI track.
- Press **Alt**, select the **Object Selection** tool and draw on the MIDI track.
- Select the **Object Selection** tool, and double-click on the MIDI track, between the left and right locator.



Folder Parts

A folder part is a graphic representation of events and parts on the tracks in the folder.

Folder parts indicate the time position as well as the vertical track position. If part colors are used, these are also shown in the folder part.

Any editing that you perform to a folder part affects all the events and parts it contains. Tracks inside a folder can be edited as one entity.

NOTE

If you want to edit the individual tracks within the folder, you can double-click the folder part. This opens the editors for the events and parts that are present on the tracks.

RELATED LINKS

[Coloring Notes and Events](#) on page 672

[Group Editing Mode \(Cubase Pro only\)](#) on page 198

Editing Techniques for Parts and Events

This section describes techniques for editing in the **Project** window. If not explicitly stated, all descriptions apply to both events and parts, even though we use the term event for convenience.

In the **Project** window, you can edit events using the following techniques:

- By selecting and using one of the tools in the **Project** window toolbar.

NOTE

Some editing tools feature additional functions if you press modifier keys. You can customize the default modifier keys in the **Preferences** dialog (**Editing-Tool Modifiers** page).

- By opening the **Edit** menu and selecting one of the functions.
- By editing in the info line.
- By using a key command.

NOTE

Snap is taken into account.

RELATED LINKS

[Editing - Tool Modifiers](#) on page 1006

Auditioning Audio Parts and Events

You can audition audio parts and events in the **Project** window by using the **Play** tool.

PROCEDURE

1. Click **Play** .
2. Click where you want playback to start, and keep the mouse button pressed.

RESULT

The track on which you click is played back, starting at the click position. Playback is stopped when you release the mouse button.

NOTE

When auditioning, audio will be routed directly to the **Control Room** (Cubase Pro only) if the **Control Room** is activated. If the **Control Room** is deactivated, the audio is routed to the default output bus, bypassing the audio channel's settings, effects and EQs. In Cubase Artist, the **Main Mix** bus is always used for monitoring.

Scrubbing

The **Scrub** tool allows you to locate positions in events by playing back, forwards or backwards.

PROCEDURE

1. Click **Play** .
2. Click **Play** again to open a pop-up menu.
3. Select **Scrub** .
4. Click the event and keep the mouse button pressed.
5. Drag to the left or right.

RESULT

The project cursor moves correspondingly and the event is played back. The speed and the pitch of the playback depend on how fast you move the mouse.

NOTE

Insert effects are bypassed when scrubbing with the mouse.

Scrub Tool

Scrubbing can be quite a burden on your system. If playback problems occur, open the **Preferences** dialog (**Transport-Scrub** page), and deactivate **Use High Quality Scrub Mode**. This lowers the resampling quality, but makes scrubbing less demanding on the processor, especially in large projects.

In the **Preferences** dialog (**Transport-Scrub** page), you can also adjust the **Scrub** volume.

Selecting with the Object Selection Tool

PROCEDURE

1. Click **Object Selection** .
2. In the event display, click the events that you want to select.

NOTE

You can also use the **Up Arrow**, **Down Arrow**, **Left Arrow**, **Right Arrow** keys on the computer keyboard to select the event on the upper or lower track or the previous or next event on the same track.

Select Submenu

If the **Object Selection** tool is selected, the **Select** submenu features specific options for selecting events in the **Project** window.

- To open the **Select** submenu, select **Edit > Select**.

All

Selects all events in the **Project** window.

None

Deselects all events.

Invert

Inverts the selection. All selected events are deselected and all events that were not selected are selected instead.

In Loop

Selects all events that are partly or wholly between the left and right locator.

From Start to Cursor

Selects all events that begin to the left of the project cursor.

From Cursor to End

Selects all events that end to the right of the project cursor.

Equal Pitch all Octaves/same Octave

These functions are available in the MIDI editors and the **Sample Editor**.

Select Controllers in Note Range

This function is available in the MIDI editors.

All on Selected Tracks

Selects all events on the selected track.

Events under Cursor

Automatically selects all events on the selected tracks that are touched by the project cursor.

Select Event

This function is available in the **Sample Editor**.

Left/Right Selection Side to Cursor

These functions are only used for range selection editing.

NOTE

When the **Range Selection** tool is selected, the **Select** submenu features different functions.

RELATED LINKS

[Selection Range Options](#) on page 201

[Range Editing](#) on page 440

Removing Events

PROCEDURE

- To remove an event from the **Project** window, do one of the following:
 - Select **Erase**  and click the event.
 - Select the events and select **Edit > Delete**.
 - Select the events and press **Backspace**.
-

Moving Events

You can move events using any of the following methods:

- Use the **Object Selection** tool.
- Use **Nudge** tool.
- Select **Edit > Move to** and select one of the options.
- Select the event and edit the start position on the info line.

RELATED LINKS

[Moving with the Object Selection Tool](#) on page 190

[Moving with the Nudge Buttons](#) on page 191

[Move to Submenu](#) on page 191

[Moving via the Info Line](#) on page 191

Moving with the Object Selection Tool

PROCEDURE

1. Select **Object Selection** .

2. Click the events that you want to move and drag them to a new position.

NOTE

You can only drag events to tracks of the same type. If you hold down **Ctrl/Cmd** while dragging, you can restrict the movement either horizontally or vertically.

RESULT

The events are moved. If you moved several events, their relative positions are kept.

NOTE

To avoid accidentally moving events when you click them in the **Project** window, the response when you move an event by dragging is slightly delayed. You can adjust this delay with the **Drag Delay** setting (**File > Preferences > Editing**).

Moving with the Nudge Buttons

PROCEDURE

1. Right-click the **Project** window toolbar and activate **Nudge Palette**.
The nudge buttons become available on the toolbar.



2. Select the events that you want to move, and click **Move Left**  or **Move Right** .
The selected events or parts are moved.
-

Move to Submenu

If the **Object Selection** tool is selected, the **Move to** submenu features options for moving events to specific positions in the **Project** window.

- To open the **Move to** submenu, select **Edit > Move to**.

The following options are available:

Cursor

Moves the selected event to the project cursor position. If you selected several events on the same track, the following events keep their relative position.

Origin

Moves the selected events to the positions at which they were originally recorded.

Front/Back

Moves the selected events to the front or back, respectively. This is useful if you have overlapping audio events and you want to play back an other event.

Moving via the Info Line

PROCEDURE

1. Select the event that you want to move.
 2. On the info line, double-click the **Start** field and enter a new value for the event start.
-

RESULT

The event is moved by the set value.

Renaming Events

PROCEDURE

- Do one of the following:
 - Select the events and type in a new name in the **Name** field on the info line.



- Change the track name, hold down a modifier key, and press **Return** to rename all events after the track.
-

Resizing Events

You can resize events by moving their start or end positions individually.

To resize events, you can use the **Object Selection**, the **Trim**, or the **Scrub** tools.

IMPORTANT

When resizing events, automation data is not taken into account.

RELATED LINKS

- [Resizing Events with the Object Selection Tool - Normal Sizing](#) on page 192
- [Resizing Events with the Object Selection Tool - Sizing Moves Contents](#) on page 193
- [Resizing Events with the Object Selection Tool - Sizing Applies Time Stretch](#) on page 193
- [Resizing Events with the Trim Tool](#) on page 193
- [Resizing Events with the Scrub Tool](#) on page 194
- [Snap Function](#) on page 80

Resizing Events with the Object Selection Tool - Normal Sizing

You can move the start or end point of the event without changing the content of the event.

PROCEDURE

1. Select **Object Selection** .
2. Click the **Object Selection** tool again, and select **Normal Sizing** from the pop-up menu.
3. Click and drag the lower left or right corner of the event.



RESULT

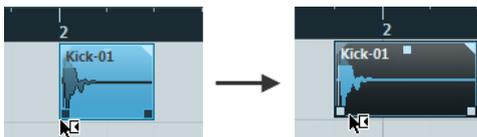
The event is resized and according to where you dragged, more or less of the content is revealed. If several events are selected, they are all resized in the same way.

Resizing Events with the Object Selection Tool - Sizing Moves Contents

You can move the start or end point of the event and move the content.

PROCEDURE

1. Select **Object Selection** .
2. Click the **Object Selection** tool again, and select **Sizing Moves Contents** from the pop-up menu.
3. Click and drag the lower left or right corner of the event.



RESULT

The event is resized and the content follows. If several events are selected, they are all resized in the same way.

Resizing Events with the Object Selection Tool - Sizing Applies Time Stretch

You can move the start or end point of the event and time stretch the content to fit the new event length.

PROCEDURE

1. Select **Object Selection** .
2. Click the **Object Selection** tool again, and select **Sizing Applies Time Stretch** from the pop-up menu.
3. Click and drag the lower left or right corner of the event.

RESULT

The part is stretched or compressed to fit the new length.

- If you resize MIDI parts, the note events are stretched (moved and resized). Controller data and Note Expression data are stretched, too.
 - If you resize audio parts, the events are moved, and the referenced audio files are time stretched to fit the new length.
- If several events are selected, they are all resized in the same way.

RELATED LINKS

[Time Stretch](#) on page 407

Resizing Events with the Trim Tool

You can move the start or end point of the event by the amount set on the **Grid Type** pop-up menu.

PREREQUISITE

The **Object Selection** tool is set to **Normal Sizing** or to **Sizing Moves Contents**.

PROCEDURE

1. Right-click the **Project** window toolbar and activate **Nudge Palette**.
The nudge buttons become available on the toolbar.



2. Select the event.
 3. Do one of the following:
 - Click **Trim Start Left** .
 - Click **Trim Start Right** .
 - Click **Trim End Left** .
 - Click **Trim End Right** .
-

RESULT

The start or end position of the selected events are moved by the amount set on the **Grid Type** pop-up menu.

Resizing Events with the Scrub Tool

You can scrub the event when moving the start or end point of the event.

PROCEDURE

1. Click **Play** .
 2. Click **Play** again to open a pop-up menu.
 3. Select **Scrub** .
 4. Click and drag the lower left or right corner of the event.
-

RESULT

The event is resized and you get an acoustic feedback while dragging.

Splitting Events

PROCEDURE

- Do one of the following:
 - Select **Split**  and click the event that you want to split.
 - Select **Object Selection** , hold down **Alt** and click the event.
 - Move the project cursor to the position where you want to split the events, and select **Edit > Functions > Split at Cursor**.

NOTE

This splits the selected events at the position of the project cursor. If no events are selected, all events on all tracks that are intersected by the project cursor are split.

- Set up the left and right locators at the position where you want to split the events, and select **Edit > Functions > Split Loop**.

NOTE

This splits the selected events at the left and right locator positions. If no events are selected, all events on all tracks that are intersected by the locators are split.

RESULT

The events are split.

NOTE

If you split a MIDI part so that the split position intersects one or several MIDI notes and **Split MIDI Events** is activated in the **Preferences** dialog (**Editing-MIDI** page), the intersected notes are split and new notes are created at the beginning of the second part. If it is deactivated, the notes remain in the first part, but stick out after the end of the part.

Gluing Events

In the **Project** window, you can glue two or more events that are situated on the same track.

PROCEDURE

- Do one of the following:
 - Select **Glue**  and click the event that you want to glue to the next event.
 - Select **Glue** , hold down **Alt**, and click the event that you want to glue to all following events.
-

RESULT

The events are glued together.

NOTE

If you first split an audio event and then glue the parts together again, an event is created, in any other case, a part is created.

Pasting Events

You can paste events from the clipboard.

PROCEDURE

- Do one of the following:
 - Select the events and select **Edit > Functions > Paste at Origin** to paste the event at the same position from which you cut or copied it.
 - Select the events, select the track where you want to paste them, and select **Edit > Functions > Paste Relative to Cursor** to paste the event while keeping its relative position to the project cursor.
-

RESULT

If you paste an audio event, it is inserted on the selected track, positioned so that its snap point is aligned with the cursor position.

If the selected track is of the wrong type, the event is inserted on its original track.

Duplicating Events

In the **Project** window, you can duplicate selected events.

PROCEDURE

- Select the event and do one of the following:

- Select **Edit > Functions > Duplicate**.
- Hold down **Alt** and drag the event to a new position.

NOTE

If you hold down **Ctrl/Cmd** as well, movement direction is restricted to either horizontal or vertical.

RESULT

A copy of the selected event is created and placed after the original. If several events are selected, all of these are copied as one unit, maintaining the relative distance between the events.

NOTE

If you duplicate audio events, the copies always refer to the same audio clip.

Repeating Events

PROCEDURE

- Do one of the following:
 - Select the events and select **Edit > Functions > Repeat** to open the **Repeat Events** dialog, that allows you to create a number of real or shared copies of the selected events.
 - Select the events, hold down **Alt**, click the handle in the lower right corner of the last selected event, and drag to the right to create a real copy.
 - Move the mouse pointer over the middle of the right event border so that it becomes a pointing hand symbol, click and drag to the right to create a real copy.
 - Select the events, hold down **Alt-Shift**, and drag to the right to create a shared copy.
 - Move the mouse pointer over the middle of the right event border so that it becomes a pointing hand symbol, hold down **Shift**, click and drag to the right to create a shared copy.

NOTE

Repeating by dragging only works if the track has a height of at least 2 rows.

RELATED LINKS

[Shared Copies](#) on page 197

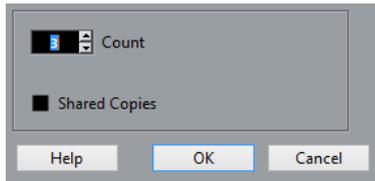
[Repeat Events Dialog](#) on page 196

[Setting the Track Height](#) on page 161

Repeat Events Dialog

The **Repeat Events** dialog allows you to create a number of real or shared copies of the selected events.

- To open the **Repeat Events** dialog, select **Edit > Functions > Repeat**.



- **Count**
Allows you to specify how many times you want the event to be repeated.
- **Shared Copies**
Activate this to create a shared copy.

RELATED LINKS

[Shared Copies](#) on page 197

Shared Copies

Shared copies are useful, if you want to create copies that are automatically edited in the same way as the original event.

You can convert a shared copy to a real copy by selecting **Edit > Functions > Convert to Real Copy**. This creates a new version of the clip that you can edit independently. The new clip is automatically added to the **Pool**.

RELATED LINKS

[Repeating Events](#) on page 196

[Repeat Events Dialog](#) on page 196

Fill Loop

You can create a number of copies between the right and left locators.

- Select **Edit > Functions > Fill Loop** to create a number of copies starting at the left locator and ending at the right locator.
The last copy is automatically shortened to end at the right locator position.

Sliding the Contents of Events

You can move the contents of an event without changing its position in the **Project** window.

PROCEDURE

- Hold down **Alt-Shift**, click the event, and drag to the left or right.

RESULT

The content of the event is moved.

NOTE

You cannot slide an audio event past the start or end of the actual audio clip. If the event plays the whole clip, you cannot slide the audio at all.

Grouping Events

You can treat several events on the same or different tracks as one unit by grouping them.

PROCEDURE

- Select the events and select **Edit > Group**.

RESULT

The events are grouped. This is indicated by an icon.



Grouped Events

If you edit one of the grouped events in the **Project** window, all other events in the same group are affected too.

Group editing operations include:

- Selecting events.
- Moving and duplicating events.
- Resizing events.
- Adjusting fade-in and fade-out (audio events only).
- Splitting events.
- Locking events.
- Muting events.
- Deleting events.

RELATED LINKS

[Fades, Crossfades, and Envelopes](#) on page 255

Group Editing Mode (Cubase Pro only)

The **Group Editing** mode for folder tracks allows you to edit parts and events in a folder as a group.

If **Group Editing**  is activated and you select an event, a part or a range on a track inside the folder track, other events, parts, or ranges that have the same start and end time and the same playback priority, are also selected and temporarily grouped. This allows you to edit together different drum tracks for bass drum, snare, toms, for example.

Temporarily means that on every new selection with the **Object Selection** or the **Range Selection** tool, Cubase looks for corresponding events or parts inside the folder and groups them. If you edit the start or end point of a single event or part before activating the **Group Editing** mode, the event or part is excluded from the group.

Edit actions in **Group Editing** mode affect all grouped events, parts, or ranges. If you select another take by using the small **To Front** arrow at the right side of one event of an edit group, for example, all other tracks inside the edit group also switch to the corresponding take. This is useful for comparing takes of a multi-track recording.

NOTE

Group Editing overwrites any regular group settings in the edit group.

RELATED LINKS

[Muting Events](#) on page 200

[Organizing Tracks in Folder Tracks](#) on page 163

Group Editing (Cubase Pro only)

You can group events and parts on multiple tracks that have the same start and end time and the same playback priority to edit them together.

PREREQUISITE

PROCEDURE

1. Select **Project > Add Track > Folder** to add a folder track.
2. Move the tracks that contain the events that you want to edit as a group into the folder track.
3. In the track list for the folder track, click **Group Editing** .



RESULT

All events, parts, or ranges inside the folder that have the same start and end time and the same playback priority are temporarily grouped.

Locking Events

If you want to make sure that you do not edit or move an event by accident, you can lock it.

PROCEDURE

- Do one of the following:
 - Select the events and select **Edit > Lock** to lock the selected events.
 - Click the padlock symbol in the track list or in the Inspector to lock all events on a track.
-

RESULT

The events are locked. This is indicated by a padlock symbol.



To unlock an event, select the event and select **Edit > Unlock**.

Lock Event Attributes

The **Lock Event Attributes** dialog allows you to lock specific event attributes.

- To open the **Lock Event Attributes** dialog, select a locked event and select **Edit > Lock**.



- **Position Locked**
Activate this to prevent the event from being moved.
- **Size Locked**
Activate this to prevent the event from being resized.
- **Others Locked**
Activate this to prevent the event from being edited. This includes adjusting the fades and event volume, processing, etc.

NOTE

You can also set these attributes in the **Preferences** dialog (**Editing** page).

RELATED LINKS

[Lock Event Attributes](#) on page 1000

Muting Events

You can mute events in the **Project** window. Muted events can be edited as usual (with the exception of adjusting fades), but are not played back.

PROCEDURE

- Do one of the following:
 - Select **Mute**  and click the events or drag a selection rectangle around them.
 - Select the events and select **Edit > Mute**.
-

RESULT

The events are muted and grayed out.



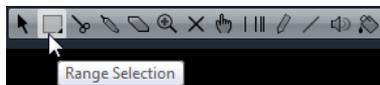
You can unmute events by selecting them and selecting **Edit > Unmute**. You can change the mute status of selected events by **Shift**-clicking them.

Range Editing

Editing in the **Project** window is not restricted to handling whole events and parts. You can also work with selection ranges, which are independent from the event/part and track boundaries.

Creating a Selection Range

- To make a selection range, drag with the **Range Selection** tool.



When the Range Selection tool is selected, you can select selection ranges options via **Edit > Select**.

- To create a selection range that encompasses an event, double-click on an event with the **Range Selection** tool.
- To create a selection range that encompasses several events, hold down **Shift** and double-click several events in a row.
- To open an encompassed event for editing in the **Sample Editor**, double-click it.

RELATED LINKS

[Selection Range Options](#) on page 201

Selection Range Options

If the **Range Selection** tool is selected, the **Select** submenu features specific options for selecting ranges in the **Project** window.

- To open the range selection options menu, select the **Range Selection** tool and select **Edit > Select**.

All

Makes a selection that covers all tracks, from the start of the project to the end. You can define the track length with the **Length** setting in the **Project Setup** dialog.

None

Removes the current selection range.

Invert

Inverts the selection. All selected events are deselected, and all events that were not selected are selected. Only used for event selection.

In Loop

Makes a selection between the left and right locator on all tracks.

From Start to Cursor

Makes a selection on all tracks, from the start of the project to the project cursor.

From Cursor to End

Makes a selection on all tracks, from the project cursor to the end of the project.

Equal Pitch - all Octaves

This function requires that a single note is selected. It selects all notes of this part that have the same pitch in any octave as the selected note.

Equal Pitch - same Octave

This function requires that a single note is selected. It selects all notes of this part that have the same pitch and the same octave as the selected note.

Select Controllers in Note Range

Selects the controllers within the note range.

All on Selected Tracks

Selects all events on the selected track. Only used for event selection.

Events under Cursor

Selects all events on the selected tracks that are touched by the project cursor.

Select Event

This is available in the **Sample Editor**.

Left Selection Side to Cursor

Moves the left side of the current selection range to the project cursor position.

Right Selection Side to Cursor

Moves the right side of the current selection range to the project cursor position.

RELATED LINKS

[Project Setup Dialog](#) on page 88

[Selecting with the Object Selection Tool](#) on page 189

[Select Submenu](#) on page 189

Selecting Ranges for Several Tracks

You can create selection ranges that cover several tracks. It is also possible to exclude tracks from a selection range.

PROCEDURE

1. Create a selection range from the first to the last track.
 2. Press **Ctrl/Cmd** and click in the selection range on the tracks that you want to exclude from the selection.
-

Editing Selection Ranges

Adjusting the Size of Selection Ranges

You can adjust the size of a selection range in the following ways:

- By dragging its edges.
The pointer takes the shape of a double arrow when you move it over an edge of the selection range.

- By holding down **Shift** and clicking.
The closest selection range edge will be moved to the position at which you clicked.
- By adjusting the selection range start or end position on the info line.
- By using the trim buttons on the toolbar.
The left trim buttons move the start of the selection range and the right buttons move the end. The edges are moved by the amount specified on the **Grid** pop-up menu.

NOTE

The trim buttons are located on the **Nudge Palette**, which is not visible on the toolbar by default.

- By using **Move Left** and **Move Right** on the toolbar.
These move the whole selection range to the left or the right. The amount of movement depends on the selected display format and the value specified on the **Grid** pop-up menu.

IMPORTANT

The contents of the selection are not moved. Using **Move Left/Move Right** is the same as adjusting the start and end of the selection range at the same time by the same amount.

NOTE

The move buttons are located on the **Nudge Palette**, which is not visible on the toolbar by default.

- To crop all events or parts that are partially within the selection range, select **Edit > Range > Crop**.
Events that are fully inside or outside the selection range are not affected.

RELATED LINKS

[The setup context menus](#) on page 978

Moving and Duplicating Selection Ranges

- To move a selection range, click and drag it to a new position.
This will move the contents of the selection range to the new position. If the range intersected events or parts, these are split before moving, so that only the sections within the selection range are affected.
- To duplicate a selection range, hold down **Alt** and drag.
You can also use the duplicate, repeat, and fill loop functions that are available for duplicating events.

RELATED LINKS

[Duplicating Events](#) on page 195

Cutting, Copying, and Pasting Selection Ranges

You can cut or copy and paste selection ranges, using the functions on the **Edit** menu. You can also use the **Cut Time** and **Paste Time** options.

Cut

Cuts out the data in the selection range and moves it to the clipboard. The selection range is replaced by empty track space in the **Project** window, meaning that events to the right of the range keep their positions.

Copy

Copies the data in the selection range to the clipboard.

Paste

Pastes the clipboard data to the start position and track of the current selection. Existing events on the tracks remain at their original position.

Paste at Origin

Pastes the clipboard data back at its original position. Existing events on the tracks remain at their original position.

This option is available in **Edit > Functions**.

Cut Time

Cuts out the selection range and moves it to the clipboard. Events to the right of the removed range are moved to the left to fill the gap.

This option is available in **Edit > Range**.

Paste Time

Pastes the selection range from the clipboard to the start position and track of the current selection. Existing events are moved to make room for the pasted data.

This option is available in **Edit > Range**.

Paste Time at Origin

Pastes the selection range from the clipboard to its original position. Existing events are moved to make room for the pasted data.

This option is available in **Edit > Range**.

Global Copy

This copies everything in the selection range.

This option is available in **Edit > Range**.

Deleting Data in Selection Ranges

- To replace data within the deleted selection range with empty track space, select **Edit > Delete** or press **Backspace**. Events to the right of the range keep their position.
- To remove the selection range and make the events to the right move to the left to fill the gap, select **Edit > Range > Delete Time**.

Splitting Selection Ranges

- To split any events or parts that are intersected by the selection range, at the positions of the selection range edges, select **Edit > Range > Split**.

Inserting Silence

You can insert empty track space from the start of the selection range. The length of the silence equals the length of the selection range.

- To insert silence, select **Edit > Range > Insert Silence**. Events to the right of the selection range start are moved to the right to make room. Events that are intersected by the selection range start are split, and the right section is moved to the right.

Playback and Transport

This chapter describes the methods for controlling playback and transport functions.

RELATED LINKS

[Transport](#) on page 1022

Transport Panel

The **Transport** panel contains the main transport functions as well as many other options related to playback and recording.

- To show the transport panel, select **Transport > Transport Panel** or press **F2**.

Transport Panel Sections

The **Transport** panel has different sections that you can show or hide by activating the corresponding options on the transport panel context menu.

- To show all **Transport** panel sections, right-click anywhere on the **Transport** panel and select **Show All**.

The following sections are available:

Virtual Keyboard



Allows you to play and record MIDI notes by using your computer keyboard or mouse.

Performance



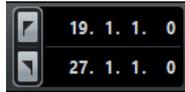
Shows the audio processing load and the hard disk transfer rate.

Record Mode



Determines what happens to your recordings and to any existing events on the track when you are recording. This section also contains the automatic MIDI record quantize function.

Locators



Allows you to go to the left or right locator position, and to set the left and right locator position numerically.

Punch Points



Allows you to activate/deactivate **Punch In** and **Punch Out**.

The section to the right of the punch buttons allows you to set up the punch positions numerically. For this to work, **Lock Punch Points to Locators** must be deactivated. You can hide/show that section by clicking the points on the divider.

Main Transport



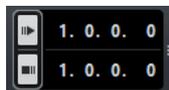
Shows the basic transport controls as well as the time display options.

Arranger



Shows the arranger functions.

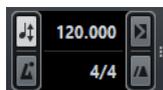
Pre-roll & Post-roll



Allows you to activate/deactivate pre-roll and post-roll.

The section to the right of the pre-roll buttons allows you to set the pre-roll values numerically. You can hide/show that section by clicking the points on the divider.

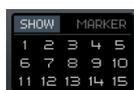
Tempo & Time Signature



Allows you to activate/deactivate the tempo track and the metronome click, and to set the tempo value and the first time signature value numerically.

The section to the right of the value fields allows you to activate/deactivate external synchronization and metronome click in precount. You can hide/show that section by clicking the points on the divider.

Marker



Shows the basic marker functions.

MIDI Activity



Allows you to monitor the MIDI input and the MIDI output signals.

Audio Activity



Allows you to monitor the audio input and output signals.

Audio Level Control



Shows clipping indicators and allows you to control the output level.

RELATED LINKS

[Transport](#) on page 1022

[Transport - Scrub](#) on page 1023

Transport Menu

The **Transport** menu contains several transport functions as well as many other options related to playback and recording.

Transport Panel

Transport Panel

Opens the **Transport** panel.

Transport

Start

Starts playback.

Stop

Stops playback.

Start/Stop

Starts/Stops playback.

Cycle

Activates/Deactivates cycle mode.

Record

Activates/Deactivates record mode.

Rewind

Moves backward.

Forward

Moves forward.

Fast Rewind

Moves backward at a faster speed.

Fast Forward

Moves forward at a faster speed.

Nudge Cursor Left

Moves the project cursor position to the left.

Nudge Cursor Right

Moves the project cursor position to the right.

Enter Project Cursor Position

Allows you to enter the project cursor position manually.

Enter Tempo

Allows you to enter the tempo manually.

Enter Time Signature

Allows you to enter the time signature manually.

Go to Project Start

Moves the project cursor position to the start of the project.

Go to Project End

Moves the project cursor position to the end of the project.

Exchange Time Formats

Switches the primary and the secondary time display.

Locators

Go to Left Locator Position

Moves the project cursor position to the left locator.

Go to Right Locator Position

Moves the project cursor position to the right locator.

Set Left Locator to Project Cursor Position

Sets the left locator to the project cursor position.

Set Right Locator to Project Cursor Position

Sets the right locator to the project cursor position.

Enter Left Locator Position

Allows you to enter the position of the left locator manually.

Enter Right Locator Position

Allows you to enter the position of the right locator manually.

Set Locators to Selection Range

Sets the locators to encompass the selection.

Exchange Left & Right Locator Positions

Switches the positions of the left and right locator.

Loop Selection Range

Activates playback from the start of the current selection and keeps starting over again when reaching the selection end.

Punch Points

Lock Punch Points to Locators

Allows you to unlock/lock the punch in and punch out position to the left and the right locator.

Activate Punch In

Activates/Deactivates punch in.

Activate Punch Out

Activates/Deactivates punch out.

Go to Punch In Position

Moves the project cursor position to the punch in position.

Go to Punch Out Position

Moves the project cursor position to the punch out position.

Set Punch In to Project Cursor Position

Moves the punch in position to the project cursor position.

Set Punch Out to Project Cursor Position

Moves the punch out position to the project cursor position.

Enter Punch In Position

Allows you to enter the punch in position manually.

Enter Punch Out Position

Allows you to enter the punch out position manually.

Set Punch Points to Selection Range

Sets the punch in and the punch out position to the selected event range.

Set Project Cursor Position

Locate Selection Start

Moves the project cursor to the beginning of the selection.

Locate Selection End

Moves the project cursor to the end of the selection.

Locate Next Marker

Moves the project cursor to the next marker.

Locate Previous Marker

Moves the project cursor to the previous marker.

Locate Next Hitpoint

Moves the project cursor to the next hitpoint on the selected track.

Locate Previous Hitpoint

Moves the project cursor to the previous hitpoint on the selected track.

Locate Next Event

Moves the project cursor to the next event on the selected track.

Locate Previous Event

Moves the project cursor to the previous event on the selected track.

Play Project Range

Play from Selection Start

Activates playback from the start of the current selection.

Play from Selection End

Activates playback from the end of the current selection.

Play until Selection Start

Activates playback two seconds before the start of the current selection and stops at the selection start.

Play until Selection End

Activates playback two seconds before the end of the current selection and stops at the selection end.

Play until Next Marker

Activates playback from the project cursor and stops at the next marker.

Play Selection Range

Activates playback from the start of the current selection and stops at the selection end.

Pre-roll & Post-roll

Use Pre-roll

Activates/Deactivates the pre-roll.

Use Post-roll

Activates/Deactivates the post-roll.

Post-roll from Selection Start

Starts playback from the beginning of the selected range and stops after the time set in the post-roll field on the **Transport** panel.

Post-roll from Selection End

Starts playback from the end of the selected range and stops after the time set in the post-roll field on the **Transport** panel.

Pre-roll to Selection Start

Stops playback at the selection start. The playback start position is set in the pre-roll field on the **Transport** panel.

Pre-roll to Selection End

Stops playback at the selection end. The playback start position is set in the pre-roll field on the **Transport** panel.

Use Tempo Track

Use Tempo Track

Activates/Deactivates the tempo track.

Common Record Modes

Punch In/Out

Activates/Deactivates punch in/out.

Re-Record

Activates/Deactivates the re-record mode.

Start Recording at Project Cursor Position

Activates/Deactivates the start of the recording at the project cursor position.

Start Recording at Left Locator/Punch In Position

Activates/Deactivates the start of the recording at the left locator.

Audio Record Mode

These options allow you to select what happens when you record over existing events.

Keep History

Keeps existing events or portions of events.

Cycle History + Replace

Replaces existing events or portions of events by the new recording. In cycle mode, all takes from the current cycle recording are kept.

Replace

Replaces existing events or portions of events by the last take.

MIDI Record Mode

These options allow you to select what happens when you record over existing parts.

New Parts

Keeps existing parts and saves the new recording as a new part.

Merge

Keeps existing events in parts and adds the newly recorded events.

Replace

Replaces existing events in parts by the new recording.

Auto Quantize in Record

Activates automatic quantizing during record.

MIDI Cycle Record Mode

Mix

Adds everything you record to what was previously recorded.

Overwrite

Overwrites all MIDI that you have recorded on previous laps as soon as you play a MIDI note or send any MIDI message.

Keep Last

Replaces previously recorded laps only if the new lap is completed.

Stacked

Turns each recorded cycle lap into a separate MIDI part, and divides the track into lanes for each cycle lap. The parts are stacked above each other, each on a different lane. All takes but the last one are muted.

Mix-Stacked (No Mute)

Same as Stacked, but parts are not muted.

Auto Quantize in Record

Activates automatic quantizing during record.

Retrospective MIDI Record

Retrospective MIDI Record

Allows you to capture MIDI notes that you play in stop mode or during playback. For this to work, you need to enable the **Retrospective Record** option in the **Preferences** dialog (**Record** > **MIDI**).

Metronome Setup

Metronome Setup

Opens the **Metronome Setup** dialog.

Use Metronome

Use Metronome

Activates/Deactivates the metronome click.

Project Synchronization Setup

Project Synchronization Setup

Opens the **Project Synchronization Setup** dialog.

Use External Synchronization

Use External Synchronization

Sets Cubase to be synchronized externally.

RELATED LINKS

[Left and Right Locators](#) on page 213

[Punch In and Punch Out](#) on page 217

[Pre-Roll and Post-Roll](#) on page 216

- [Common Record Modes](#) on page 226
- [Audio Record Modes](#) on page 231
- [MIDI Record Modes](#) on page 237
- [Enabling Retrospective MIDI Record](#) on page 239
- [Metronome](#) on page 218

Transport

The **Transport** contains all transport functions in an integrated and fixed zone of the **Project** window.

- To activate the transport, click **Setup Window Layout** on the **Project** window toolbar and activate **Transport**.



- To display all transport elements, right-click in an empty area of the transport and select **Show All**.
- To show all controls of a section, click the points to the right of the section and drag all the way to the right. To hide the controls again, drag to the left.



RELATED LINKS

[Transport](#) on page 53

Left and Right Locators

The left and right locators are a pair of markers that you can use to set up cycle boundaries. Left and right locators are available in the **Project** window as well as in the editors.



Locators are indicated by the flags in the ruler. The area between the left and the right locator is the locator range. The locator range is highlighted in the ruler and the event display.

NOTE

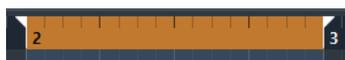
The event display in the MIDI editors is only highlighted if **Show Part Borders** is deactivated.

- To activate/deactivate the cycle mode, click the locator range in the upper part of the ruler.



NOTE

If you activate cycle mode, and the right locator is positioned before the left locator, the locator range is skipped during playback.



RELATED LINKS

[Cycle Recording](#) on page 225
[Toolbar](#) on page 679

Setting Locator Ranges

There are several ways to set locator ranges.

To set the locator range, do one of the following:

- Click in the upper part of the ruler and drag to the right.
- Select a range or an event and select **Transport > Locators > Set Locators to Selection Range**.
- Double-click a cycle marker.
- Press **P**.

To move the locator range, do the following:

- Click, keep the mouse button pressed, and then drag left or right in the upper part of the ruler.

To create a new locator range in a range, do the following:

- Press **Ctrl/Cmd-Alt** and drag left or right in the upper part of the ruler.

To set both locators to the nearest snap position, do the following:

- Press **Ctrl/Cmd-Alt** and click at a position in the upper part of the ruler.

Setting Locator Positions

There are several ways to set the locator positions.

To set locator positions, do one of the following:

- Drag the left handle in the upper part of the ruler.
- Drag the right handle in the upper part of the ruler.
- Press **Ctrl/Cmd** and click at the position in the upper part of the ruler to set the left locator.
- Press **Alt** and click at the position in the ruler to set the right locator.
- Adjust the **Left/Right Locator Position** value on the **Transport** panel.

To set locator positions to the project cursor position, do one of the following:

- Press **Ctrl/Cmd**, and on the numeric keypad press **1** to set the left locator.
- Press **Ctrl/Cmd**, and on the numeric keypad press **2** to set the right locator.
- Press **Alt** and click **Go to Left/Right Locator Position** on the **Transport** panel.

Setting the Project Cursor Position

You have several possibilities to set the project cursor position, that is, locate to specific time positions in the **Project** window.

- By using the main transport functions.
- By clicking or dragging in the lower part of the ruler.
- By using the functions in the **Set Project Cursor Position** submenu of the **Transport** menu.
- By clicking in an empty section in the event display.

NOTE

For this to work you must activate **Locate when Clicked in Empty Space** in the **Preferences** dialog on the **Transport** page.

- By using locators.
- By using markers.
- By using the arranger functions.
- By using key commands.

RELATED LINKS

[Transport Panel Sections](#) on page 205

[Ruler](#) on page 50

[Transport Menu](#) on page 207

[Transport](#) on page 1022

[Left and Right Locators](#) on page 213

[Markers](#) on page 285

[Arranger Track](#) on page 268

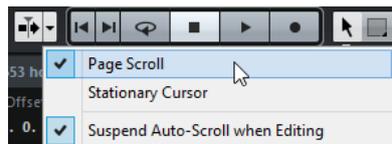
[Key Commands](#) on page 938

Auto-Scroll

Auto-Scroll allows you to keep the project cursor visible in the window during playback.

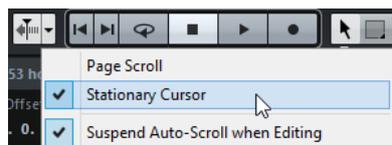
If you activate **Auto-Scroll** on the toolbar of the **Project** window or one of the editors, you can select one of the following modes:

Page Scroll



The project cursor moves from the left side to the right side of the window. When the project cursor reaches the right side of the window, the ruler and the project cursor jump to the left side of the window and start over again. This behavior can be compared to turning a page of a book.

Stationary Cursor



The project cursor is kept in the middle of the window and the ruler scrolls continuously to the left.

RELATED LINKS

[Toolbar](#) on page 44

Suspend Auto-Scroll when Editing

If you do not want the **Project** window display to change when editing during playback, activate **Suspend Auto-Scroll when Editing**.

Suspend Auto-Scroll when Editing is located to the right of the **Auto-Scroll** button.

If this option is activated, auto-scrolling is suspended as soon as you click anywhere in the event display during playback until playback stops or you click **Auto-Scroll** again.

As a visual feedback, the **Auto-Scroll** button changes its color.

Time Formats

You can set up different time formats.

Selecting the Primary Time Format

On the **Transport** panel, you can select the primary time format. This is the global display format that is used for all rulers and position displays in the program, except the ruler tracks.

PROCEDURE

1. In the main transport section on the **Transport** panel, click **Select Primary Time Format**.
2. Select a time format from the pop-up menu.



You can also select **Project > Project Setup > Display Format** to select the primary time format.

RESULT

The time format on the **Transport** panel and all rulers and position displays are updated.

Independent Time Displays

You can show time displays that are independent from the global display format.

To select an independent time display, do one of the following:

- In the ruler of the **Project** window or any editor, click the arrow button to the right of the ruler.
- Select **Project > Add Track > Ruler** to add a ruler track, and right-click the ruler.
- In the **Main Transport** section of the **Transport** panel, click **Select Secondary Time Format**.

RELATED LINKS

[Ruler](#) on page 50

[Ruler Track](#) on page 147

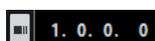
Pre-Roll and Post-Roll

You can activate pre-roll and post-roll with the corresponding buttons in the **Pre-roll & Post-roll** section on the **Transport** panel or by selecting **Transport > Pre-roll & Post-roll > Use Pre-roll/Use Post-roll**.

- By setting a pre-roll value you instruct Cubase to roll back a short section whenever playback is activated.



- By setting a post-roll value you instruct Cubase to play back a short section after automatic punch out before stopping.



NOTE

This only works if **Punch Out** is activated on the **Transport** panel and **Stop after Automatic Punch Out** is activated. You can access the **Stop after Automatic Punch Out** option by opening the **Preferences** dialog and selecting **Record**.

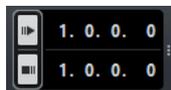
Using Pre-Roll and Post-Roll

PREREQUISITE

On the **Transport** panel, **Lock Punch Points to Locators** is activated.

PROCEDURE

1. Set the locators to where you want to start and end recording.
2. On the **Transport** panel, activate **Punch In** and **Punch Out**.
3. Open the **Preferences** dialog and select **Record**.
4. Activate **Stop after Automatic Punch Out**.
5. On the **Transport** panel, activate **Pre-roll** and **Post-roll**.



6. In the **Pre-roll Amount** and **Post-roll Amount** fields, enter the pre-roll and post-roll values.
 7. Activate **Record**.
-

RESULT

The project cursor rolls back by the time specified pre-roll value and playback starts. When the cursor reaches the left locator, recording is automatically activated. When the cursor reaches the right locator, recording is deactivated, but playback continues for the specified post-roll value before stopping.

Punch In and Punch Out

The punch in and the punch out points are a pair of markers that you can use for punch in and punch out recordings. The punch in position determines the record start position whereas the punch out position determines the record stop position.

You can activate punch in and punch out by activating the corresponding buttons on the **Transport** panel.

The punch in position is locked to the left locator position and the punch out position to the right locator position. The punch position fields are unavailable.

However, you can detach the punch points from the locators by deactivating **Lock Punch Points to Locators**.



If you do so, the value fields become available and you can use them to set up the punch positions independently from the locator positions.

You can also drag the punch in and punch out handles in the ruler to set the punch positions.



RELATED LINKS

[Activating Recording Automatically](#) on page 224

[Stopping Recording](#) on page 224

Metronome

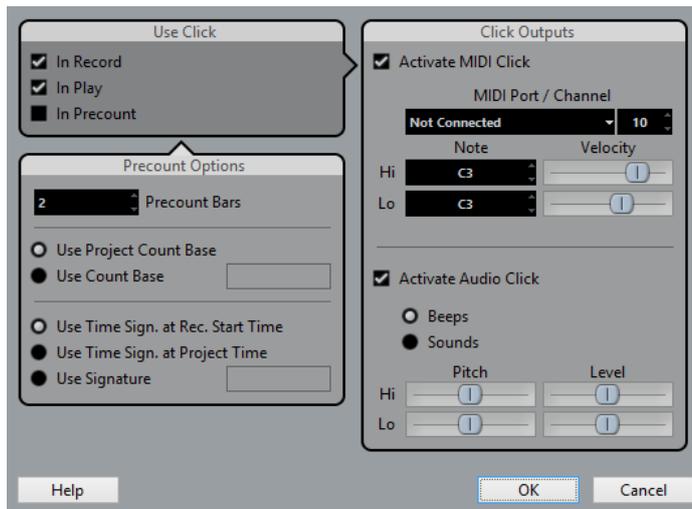
You can use the metronome click as a timing reference. The two parameters that govern the timing of the metronome are tempo and time signature.

- To activate the metronome click, activate **Metronome/Click** on the **Transport** panel. You can also select **Transport > Use Metronome** or use the corresponding key command.
- To set up the metronome, select **Transport > Metronome Setup**.

Metronome Setup

You can make settings for the metronome in the **Metronome Setup** dialog.

- To open the **Metronome Setup** dialog, select **Transport > Metronome Setup**.



Metronome Options Section

In the **Use Click** section, the following options are available:

In Record

Allows you to activate the metronome click during recording.

In Play

Allows you to activate the metronome click during playback.

In Precount

Allows you to activate a musical count-in that is played when you start recording from stop mode.

Precount Options Section

In the **Precount Options** section, the following options are available:

Precount Bars

Allows you to set the number of bars that the metronome counts in before recording starts.

Use Project Count Base

Activate this to let the metronome play one click per beat according to the project count base.

Use Count Base

Activate this to set the rhythm of the metronome. For example, setting this to 1/8, gives you eighth notes (two clicks per beat).

Use Time Sign. at Rec. Start Time

Activate this to let the precount automatically use the time signature and tempo set at the position where recording starts.

Use Time Sign. at Project Time

Activate this to let the precount use the time signature set on the tempo track and apply any tempo changes on the tempo track during the precount.

Use Signature

Allows you to set a time signature for the precount. In this mode, tempo changes on the tempo track do not affect the precount.

Click Outputs Section

In the **Click Outputs** section, the following options are available:

Activate MIDI Click

Allows you to activate the MIDI click.

MIDI Port/Channel

Allows you to select a MIDI output and channel for the MIDI click. You can also select a VST instrument previously set up in the **VST Instruments** window.

Hi Note/Velocity

Allows you to set the MIDI note number and velocity value for the first beat in a bar, the high note.

Lo Note/Velocity

Allows you to set the MIDI note number and velocity for the other beats, the low notes.

Activate Audio Click

Allows you to activate the audio click that sounds via the audio hardware.

Beeps

Allows you to activate beeps generated by the program. Adjust the pitch and level of the beeps for the Hi (first) beat and Lo (other) beats using the sliders below.

Sounds

Allows you to load audio files for the Hi and Lo metronome sounds in the Sound fields below. The sliders set the level of the click.

Chase

Chase is a function that makes sure your MIDI instruments sound as they should when you locate to a new position and start playback. This is accomplished by the program transmitting a number of MIDI messages to your instruments each time that you move to a new position in the project, making sure all MIDI devices are set up correctly with regard to program change, controller messages (such as MIDI Volume), etc.

EXAMPLE

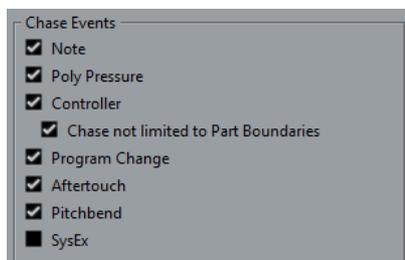
You have a MIDI track with a program change event inserted at the beginning. This event makes a synth switch to a piano sound.

At the beginning of the first chorus you have another program change event which makes the same synth switch to a string sound.

You now play back the song. It begins with the piano sound and then switches to the string sound. In the middle of the chorus you stop and rewind to some point between the beginning and the second program change. The synth now still plays the string sound although in this section it really should be a piano.

The **Chase** function takes care of that. If program change events are set to be chased, Cubase tracks the music back to the beginning, finds the first program change, and transmits it to your synth, setting it to the correct sound.

The same thing can apply to other event types as well. In the **Preferences** dialog on the **MIDI** page, the **Chase Events** settings determine which event types are chased when you locate to a new position and start playback.



RELATED LINKS

[Chase Events](#) on page 1013

Virtual Keyboard

The Virtual Keyboard allows you to play and record MIDI notes by using your computer keyboard or mouse. This is useful if you have no external MIDI instrument at hand and you do not want to draw in notes with the Draw tool.

When the Virtual Keyboard is displayed, the usual key commands are blocked because they are reserved for the Virtual Keyboard. The only exceptions are:

- Save: **Ctrl/Cmd-S**
- Start/Stop Record: **Num ***
- Start/Stop Playback: **Space**
- Jump to left locator: **Num 1**
- Delete: **Delete** or **Backspace**
- Cycle on/off: **Num /**
- Show/Hide Transport panel: **F2**
- Show/Hide Virtual Keyboard: **Alt-K**

Recording MIDI With the Virtual Keyboard

PREREQUISITE

You have selected a MIDI or instrument track and activated **Record Enable**.

PROCEDURE

1. Select **Devices > Virtual Keyboard**.
The Virtual Keyboard is displayed in the Transport panel.
2. On the **Transport** panel, activate **Record**.
3. Perform one of the following actions to enter some notes:
 - Click on the keys of the virtual keyboard.
 - Press the corresponding key on your computer keyboard.

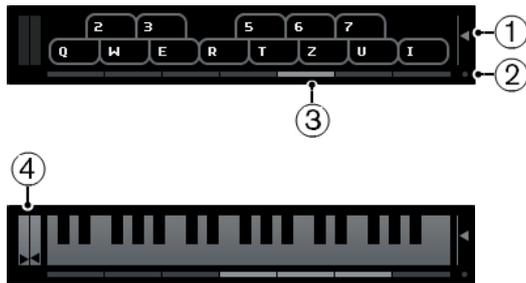
NOTE

Press several keys simultaneously to enter polyphonic parts. The maximum number of notes that can be played at one time varies between the different operating systems and hardware configurations.

AFTER COMPLETING THIS TASK

Close the virtual keyboard to make all key commands available again.

Virtual Keyboard Options



1. Note Velocity Level

This slider allows you to adjust the volume of the virtual keyboard. You can also use the **Up Arrow** key or the **Down Arrow** key for this.

2. Change Virtual Keyboard Display Type

This button allows you to switch between computer keyboard and piano keyboard display mode.

The computer keyboard mode, you can use the two rows of keys that are displayed on the Virtual Keyboard to enter notes.

The piano keyboard has a wider range of keys. It allows you to enter more than one voice simultaneously. You can also use the **Tab** key for this.

3. Octave Offset

These buttons allow you to switch the keyboard range to a lower or higher octave. You have seven full octaves at your disposal. You can also use the **Left Arrow** key or the **Right Arrow** key for this.

4. Pitchbend/Modulation Sliders

These sliders are only available in piano keyboard mode. The left slider displays pitchbend, the right slider shows modulation changes. To introduce modulation, click on a key and drag upwards or downwards. To introduce pitchbend drag left or right.

Recording

In Cubase, you can record audio and MIDI.

Make the following initial preparations:

- Set up, connect, and calibrate your audio hardware.
- Open a project and set up the project setup parameters according to your specifications. Project setup parameters determine the record format, sample rate, project length, etc. that affect the audio recordings that you make during the course of the project.
- If you plan to record MIDI, set up and connect your MIDI equipment.

RELATED LINKS

[Setting Up Audio](#) on page 13

[Setting Up MIDI](#) on page 20

Basic Recording Methods

The basic recording methods apply to audio and MIDI recordings.

Record Enabling Tracks

To be able to record, you must record-enable the tracks on which you want to record.

- To record-enable a track, activate **Record Enable** in the track list, in the Inspector, or in the MixConsole.
- To record-enable all audio tracks simultaneously, set up a key command for **Activate Record Enable for all Audio Tracks** in the **Mixer** category of the **Key Commands** dialog and use it.
- To record-enable audio or MIDI tracks on selection, activate the **Enable Record on Selected Audio Track** or the **Enable Record on Selected MIDI Track** option (**File > Preferences > Editing > Project & MixConsole**).

NOTE

The exact number of audio tracks that you can record simultaneously depends on your computer CPU and hard disk performance. Activate the **Warn on Processing Overloads** option (**File > Preferences > VST**) to show a warning message as soon as the CPU overload indicator lights up during recording.

RELATED LINKS

[Editing - Project & MixConsole](#) on page 1005

[VST](#) on page 1024

Activating Recording

You can activate recording manually or automatically.

Activating Recording Manually

- To activate recording, click **Record** on the **Transport** panel or on the toolbar. You can also use the corresponding key command, by default **Num-***.

Recording starts from the current cursor position.

NOTE

When you start recording in **Stop** mode, you can start recording from the left locator by activating **Start Record at Left Locator/Punch In Position** on the **Transport** menu. The pre-roll setting or the metronome count-in will be applied.

Activating Recording Automatically

Cubase can automatically switch from playback to recording at a given position. This is useful if you must replace a section of a recording and want to listen to what is already recorded up to the recording start position.

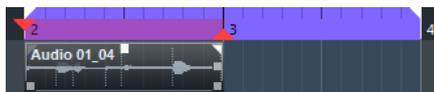
PROCEDURE

1. Set the left locator to the position where you want to start recording.
If you want to set up the punch points independently from the locators, deactivate **Lock Punch Points to Locators** on the **Transport** panel, and set up the punch in and punch out positions in the value fields to the right.
 2. Activate **Punch In** on the **Transport** panel.
 3. Activate playback from any position before the left locator.
-

RESULT

If you have unlocked the punch positions from the locator positions, recording is automatically activated when the project cursor reaches the punch in position.

If cycle mode is activated, the punch in point corresponds to the position of the left locator, and the punch out point is set before the right locator, recording is stopped at the punch out position and resumed at the punch in position.



If the punch positions are locked to the locators, recording is automatically activated when the project cursor reaches the left locator.

RELATED LINKS

[Punch In and Punch Out](#) on page 217

Stopping Recording

- To stop recording and playback, click **Stop** on the **Transport** panel or use the corresponding key command, by default **Num-0**.
- To stop recording and continue playback, click **Record** or use the corresponding key command, by default **Num-***.
- To stop recording automatically when the project cursor reaches the punch out position and continue playback, activate **Punch Out** on the **Transport** panel.

NOTE

If you have unlocked the punch positions from the locator positions, recording is automatically stopped when the project cursor reaches the punch out position.

NOTE

If cycle mode is activated, the punch in point is set after the left locator, and the punch out point corresponds to the right locator, recording is started at the punch in position, stopped at the punch out position, and resumed at the punch in position.

RELATED LINKS

[Punch In and Punch Out](#) on page 217

Cycle Recording

You can record in a cycle, that is, you can record a selected section repeatedly and seamlessly.

PREREQUISITE

A cycle is set up with the left and right locators.

PROCEDURE

1. Click the **Cycle** on the **Transport** panel to activate cycle mode.
 2. Activate recording from the left locator, before or within the cycle.
As soon as the project cursor reaches the right locator, it jumps back to the left locator and continues recording a new lap.
-

RESULT

The results of cycle recording depend on the selected record mode. They also differ for audio and MIDI.

RELATED LINKS

[Left and Right Locators](#) on page 213

[Recording MIDI](#) on page 235

[Recording Audio](#) on page 230

Using Pre-Roll and Post-Roll

You can set up a pre-roll and a post-roll for recording.

PREREQUISITE

Select **File > Preferences > Record** and activate the **Stop after Automatic Punch Out** option.

PROCEDURE

1. Set the locators to where you want to start and end recording.
 2. On the **Transport** panel, activate **Punch In** and **Punch Out**.
 3. Activate **Pre-roll** and **Post-roll**.
 4. Specify a **Pre-roll Amount** and a **Post-roll Amount**.
 5. Click **Record**.
-

RESULT

The project cursor rolls back and starts playback at the time that has been set as pre-roll amount. When the cursor reaches the left locator, recording is automatically activated. When the cursor reaches the right locator, recording is deactivated, and the playback continues as long as the time that has been set as post-roll amount.

Common Record Modes

The **Common Record Modes** determine what happens if you click **Record** during an audio or MIDI recording.

- To access the record modes, select **Transport > Common Record Modes**. You can also access the **Common Record Modes** by clicking the upper part of the **Record Modes** section in the **Transport** panel.

Punch In/Out

In this mode, the recording is stopped.

Re-Record

In this mode, the recording is reinitiated, the events are removed and recording is restarted from the exact same position.

Start Recording at Cursor

In this mode, recording starts from the cursor position.

Start Recording at Left Locator/Punch In Position

In this mode, recording starts from the left locator.

RELATED LINKS

[Transport Menu](#) on page 207

[Transport Panel Sections](#) on page 205

Re-Recording

PROCEDURE

1. Activate **Transport > Common Record Modes > Re-Record**.
 2. Activate recording.
 3. Hit **Record** again to restart recording.
-

RESULT

The project cursor jumps back to the record start position and recording is reinitiated. Pre-roll and pre-count settings are taken into account.

NOTE

The previous recordings are removed from the project and cannot be retrieved using **Undo**. However, they remain in the **Pool**.

Monitoring

In Cubase, monitoring means listening to the input signal while preparing to record or while recording.

The following ways of monitoring are available.

- Via Cubase.
- Externally by listening to the signal before it reaches Cubase.
- By using ASIO Direct Monitoring.
This is a combination of both other methods.

Monitoring via Cubase

If you use monitoring via Cubase, the input signal is mixed with the audio playback. This requires an audio hardware configuration with a low latency value.

PROCEDURE

1. In the track list, activate **Monitor**.



2. In the **MixConsole**, adjust the monitoring level and the panning.
You can add effects and EQ to the monitor signal using the track's channel. If you are using plug-in effects with large inherent delays, the automatic delay compensation function in Cubase will increase the latency. If this is a problem, you can use the Constrain Delay Compensation function while recording.
3. Select **File > Preferences > VST**.
4. Open the **Auto Monitoring** pop-up menu and select a monitoring mode.

RESULT

The monitored signal will be delayed according to the latency value which depends on your audio hardware and drivers. You can check the latency of your hardware in the **Device Setup** dialog (**Device > Device Setup > VST Audio System**).

RELATED LINKS

[VST](#) on page 1024

External Monitoring

External monitoring means listening to the input signal before it is sent into Cubase. It requires an external mixer for mixing the audio playback with the input signal. The latency value of the audio hardware configuration does not affect the monitor signal. When using external monitoring, you cannot control the level of the monitor signal from within Cubase or add VST effects or EQ to the monitor signal.

PROCEDURE

1. Select **File > Preferences > VST**.
2. Open the **Auto Monitoring** pop-up menu and select **Manual**.
3. Deactivate **Monitor** in Cubase.
4. On your mixing desk or mixer application for your audio hardware, activate the **Thru** or **Direct Thru** mode to send the input audio back out again.

ASIO Direct Monitoring

If your audio hardware is ASIO 2.0 compatible, it may support ASIO Direct Monitoring. This feature may also be available for audio hardware with Mac OS drivers. In ASIO Direct Monitoring mode, the monitoring is done in the audio hardware, and monitoring is controlled from Cubase.

The latency value of the audio hardware configuration does not affect the monitor signal when using ASIO Direct Monitoring.

PROCEDURE

1. In the track list, activate **Monitor**.



2. Select **Devices > Device Setup**.
3. In the **Device Setup** dialog, select your driver in the **Devices** list on the left to display the driver settings for your audio hardware, and activate the **Direct Monitoring** checkbox. If the checkbox is grayed out, your audio hardware (or its driver) does not support ASIO Direct Monitoring. Consult the audio hardware manufacturer for details.
4. Select **File > Preferences > VST**.
5. Open the **Auto Monitoring** pop-up menu and select a monitoring mode.
6. In the MixConsole, adjust the monitoring level and panning. Depending on the audio hardware, this might not be possible.

AFTER COMPLETING THIS TASK

You can monitor the input levels of audio tracks, that is, you can map the input bus metering to monitor-enabled audio tracks and watch the input levels of your audio tracks when working in the **Project** window.

- Select **File > Preferences > Metering** and activate **Map Input Bus Metering to Audio Track (in Direct Monitoring)**.
As the tracks are mirroring the input bus signal you will see the same signal in both places. When using mapped metering, any functions that you apply to the audio track are not reflected in its meters.

NOTE

When using Steinberg hardware (MR816 series) in combination with ASIO Direct Monitoring, monitoring will be virtually latency-free. If you are using RME Audio Hammerfall DSP audio hardware, make sure that the pan law is set to -3 dB in the card's preferences.

NOTE

With Direct Monitoring activated, Direct Routing cannot be used for routing destinations 2-8. Only the first bus can be used for Direct Monitoring.

RELATED LINKS

[VST on page 1024](#)

Monitoring MIDI Tracks

You can monitor everything you play and record through the MIDI output and channel that are selected for the MIDI track.

PREREQUISITE

Local Off is activated on your MIDI instrument.

PROCEDURE

1. Select **File > Preferences > MIDI**.

2. Make sure **MIDI Thru Active** is activated.
3. In the track list, activate **Monitor**.



RESULT

Incoming MIDI is echoed back out again.

RELATED LINKS

[MIDI](#) on page 1012

Audio Recording Specifics

Preparations

Selecting a Record File Format

You can set up the record file format, that is, the sample rate, bit resolution, and record file type for new audio files.

PROCEDURE

1. Select **Project > Project Setup**.
2. Set up the settings for **Sample Rate**, **Bit Resolution**, and **Record File Type**.

IMPORTANT

The bit resolution and file type can be changed at any time while the sample rate of a project cannot be changed at a later stage.

RELATED LINKS

[Creating New Projects](#) on page 84

Setting the Audio Record Folder

Each Cubase project has a project folder containing an **Audio** folder. By default, this is where recorded audio files are stored. However, you can select record folders independently for each audio track if needed.

PROCEDURE

1. In the track list, select all tracks that you want to assign the same record folder.
2. Right-click one of the tracks to open the context menu.
3. Select **Set Record Folder**.
4. In the file dialog, navigate to the folder that you want to use as record folder or create a new folder by clicking **New Folder**.

If you want to have separate folders for different types of material (speech, ambient sounds, music, etc.), you can create subfolders within the project **Audio** folder and assign different tracks to different subfolders. This way, all audio files will still reside within the project folder, which will make managing the project easier.

Getting the Track Ready for Recording

Creating a Track and Setting the Channel Configuration

PROCEDURE

1. Select **Project > Add Track > Audio**.
 2. In the **Count** field, enter the number of tracks that you want to add.
 3. Open the **Configuration** pop-up menu and select a channel configuration.
 4. Optional: Enter a track name.
 5. Click **Add Track**.
-

RELATED LINKS

[Add Track Dialog](#) on page 155

RAM Requirements for Recording

Each track on which you record requires a certain amount of RAM, and the memory usage increases the longer the recording lasts. For each audio channel, 2.4 MB of RAM are required for MixConsole settings, etc. The memory usage increases with the length of the recording, the sample rate, and the number of tracks you record. Consider the RAM limitation of your operating system when setting up your project for recording.

Selecting an Input Bus for the Track

Before you can record on your track, you must add and set up the required input busses and specify from which input bus the track will record.

PROCEDURE

1. In the **Inspector** for the audio track, open the **Input Routing** pop-up menu.



2. Select an input bus.
-

RELATED LINKS

[Setting Up Input and Output Ports](#) on page 19

[Audio Bus Setup](#) on page 20

[Audio Track Inspector](#) on page 101

Recording Audio

You can record audio using any of the basic recording methods.

When you finish recording, an audio file is created in the **Audio** folder within the project folder. In the Pool, an audio clip is created for the audio file, and an audio event that plays the whole clip appears on the recording track. Finally, a waveform image is calculated for the audio event. If the recording was very long, this may take a while.

NOTE

The waveform image will be calculated and displayed during the actual recording process. This realtime calculation uses some processing power. If your processor is slow or if you are working on a CPU-intensive project, select **File > Preferences > Record > Audio** and deactivate **Create Audio Images During Record**.

RELATED LINKS

[Basic Recording Methods](#) on page 223

[Cycle Recording](#) on page 225

Audio Record Modes

By selecting an **Audio Record Mode** you decide what happens to your recording and to any existing events on the track where you are recording. This is necessary because you will not always record on an empty track. There may be situations where you record over existing events, especially in cycle mode.

- To access the record modes, select **Transport > Audio Record Mode**.
You can also access the **Audio Record Modes** by clicking to the right of the audio symbol in the **Record Modes** section in the **Transport** panel.

Keep History

Existing events or portions of events that are overlapped by a new recording are kept.

Cycle History + Replace

Existing events or portions of events that are overlapped by a new recording are replaced by the new recording. However, if you record in cycle mode, all takes from the current cycle recording are kept.

Replace

Existing events or portions of events that are overlapped by a new recording are replaced by the last recorded take.

RELATED LINKS

[Transport Menu](#) on page 207

[Transport Panel Sections](#) on page 205

Recording with Effects

Cubase allows you to add effects and/or EQ directly while recording. This is done by adding insert effects and/or making EQ settings for the input channel in the MixConsole.

IMPORTANT

If you record with effects, the effects become part of the audio file itself. You cannot change the effect settings after recording.

When you are recording with effects consider using 32-bit float format. This way, the bit resolution will not be reduced, which means there is no risk of clipping at this stage. Also, this preserves the signal quality perfectly. If you record in 16-bit or 24-bit format, the available headroom is lower, which means clipping can occur if the signal is too loud.

Recording a Mix of Separate Tracks

You can create a downmix of separate tracks, bass drum, hi-hats, or snare, for example. This is done by selecting an output bus, a group bus, or an FX channel bus as an input for your recording.

PROCEDURE

1. Set up your separate tracks and add a group track.
2. For each of the drum tracks, open the **Output Routing** pop-up menu and select the group track as output.
3. Create a new audio track, open the **Input Routing** pop-up menu for it and select the group track as input for this audio track.
4. Record-enable this audio track and start recording.

RESULT

The output of the group track will be recorded on the new track and you will get a mix of your separate tracks.

NOTE

You can also select an FX channel as recording source. In this case, only the output of the FX channel will be recorded.

RELATED LINKS

[Routing](#) on page 324

Undoing Recording

If you decide that you do not like what you just recorded, you can delete it.

- Select **Edit > Undo**.

This removes the events that you just recorded from the **Project** window and moves the audio clips in the Pool to the trash folder. To remove the recorded audio files from the hard disk, open the Pool, right-click the **Trash** icon and select **Empty Trash**.

RELATED LINKS

[Pool Window](#) on page 511

Recovering Audio Recordings

Cubase allows you to recover audio recordings in two situations: if you specified an audio pre-record time when you hit **Record** too late and after a system failure during recording.

Specifying an Audio Pre-Record Time

You can capture up to 1 minute of any incoming audio that you play in Stop mode or during playback. This is possible because Cubase can capture audio input in buffer memory, even when not recording.

PROCEDURE

1. Select **File > Preferences > Record > Audio**.
2. Specify a time (up to 60 seconds) in the **Audio Pre-Record Seconds** field.
This activates the buffering of audio input, making pre-record possible.
3. Make sure that an audio track is record-enabled and receives audio from the signal source.

4. When you have played some audio material that you want to capture (either in Stop mode or during playback), click **Record**.
 5. Stop the recording after a few seconds.
This creates an audio event that starts where the cursor position was when you activated recording. If you were in stop mode, and the cursor was at the beginning of the project, you may have to move the event to the right in the next step. If you were playing along to a project, you leave the event where it is.
 6. Select the **Object Selection** tool and place the cursor on the bottom left edge of the event so that a double arrow appears. Then click and drag to the left.
-

RESULT

The event is now extended, and the audio that you played before activating the recording is inserted. This means that if you played along during playback, the captured notes end up exactly where you played them in relation to the project.

RELATED LINKS

[Record - Audio](#) on page 1018

Recovering Audio Recordings after System Failure

Cubase allows you to recover audio recordings after a system failure, because of a power cut or other mishap, for example.

When you experience a computer crash during a recording, relaunch the system and check the project record folder. By default, this is the **Audio** subfolder inside the project folder. It should contain the audio file that you recorded, from the moment when you started recording to the time when your computer crashed.

NOTE

- This feature does not constitute an overall guarantee by Steinberg. While the program itself was improved in such a way that audio recordings can be recovered after a system failure, it is always possible that a computer crash, power cut, etc. might have damaged another component of the computer, making it impossible to save or recover any of the data.
 - Do not try to actively bring about this kind of situation to test this feature. Although the internal program processes have been improved to cope with such situations, Steinberg cannot guarantee that other parts of the computer are not damaged as a consequence.
-

MIDI Recording Specifics

Preparations

The preparations described in the following sections mainly focus on external MIDI devices.

MIDI Instruments and Channels

Most MIDI synthesizers can play several sounds at the same time, each on a different MIDI channel. This allows you to play back several sounds (bass, piano, etc.) from the same instrument.

Some devices, such as General MIDI compatible sound modules, always receive on all 16 MIDI channels. If you have such an instrument, there is no specific setting to make in the instrument.

On other instruments, you must use the front panel controls to set up a number of parts, timbres, or similar so that they all receive on one MIDI channel.

For more information, refer to the manual that came with your instrument.

Naming MIDI Ports

MIDI inputs and outputs are often displayed with long and complicated names. In Cubase, you can rename your MIDI ports to more descriptive names.

PROCEDURE

1. Select **Devices > Device Setup**.
2. In the **Devices** list, select **MIDI Port Setup**.
The available MIDI inputs and outputs are listed. On Windows, the device to choose depends on your system.
3. Click in the **Show As** column and type in a new name.
4. Click **OK**.

RESULT

The new port names appear on the **MIDI Input** and **Output Routing** pop-up menus.

Setting the MIDI Input

In the **Inspector**, you set the MIDI input for the track.

PROCEDURE

1. In the track list, select the track to which you want to assign a MIDI input.
2. In the topmost **Inspector** section, open the **Input Routing** pop-up menu and select an input.
The available inputs on the menu depend on the type of MIDI interface that you are using. If you hold down **Shift-Alt**, the selected MIDI input is used for all selected MIDI tracks.

NOTE

If you select **All MIDI Inputs**, the track will receive MIDI data from all available MIDI inputs.

Setting the MIDI Channel and Output

The MIDI channel and output settings determine where the recorded MIDI is routed during playback. They are also relevant for monitoring MIDI in Cubase. You can select the channel and output in the track list or in the Inspector.

PROCEDURE

1. In the track list, select the track to which you want to assign a MIDI channel and output.
2. In the topmost **Inspector** section, open the **Output Routing** pop-up menu and select an output.
The available outputs on the menu depend on the type of MIDI interface that you are using. If you hold down **Shift-Alt**, the selected MIDI output is used for all selected MIDI tracks.
3. Open the **Channel** pop-up menu and select a MIDI channel.

NOTE

If you select the **Any** MIDI channel, the MIDI material is routed to the channels that are used by your MIDI instrument.

Selecting a Sound

You can select sounds from within Cubase by instructing the program to send Program Change and Bank Select messages to your MIDI device.

PROCEDURE

1. In the track list, select the track to which you want to assign a sound.
2. In the track list or the **Inspector**, open the **Program Selector** pop-up menu and select a program.
Program Change messages give access to 128 different program locations.
3. If your MIDI instruments have more than 128 programs, you can open the **Bank Selector** pop-up menu and select different banks, each containing 128 programs.

NOTE

Bank Select messages are recognized differently by different MIDI instruments. The structure and numbering of banks and programs may also vary. Refer to the documentation of your MIDI instruments for details.

RELATED LINKS

[MIDI Track Inspector](#) on page 115

Recording in MIDI Editors

You can record MIDI data into the MIDI part that is opened in a MIDI editor.

PREREQUISITE

You have selected **Merge** or **Replace** as a **MIDI Record Mode**.

PROCEDURE

1. Click in the MIDI editor so that it gets the focus.
2. In the MIDI editor toolbar, activate **Record in Editor**.
3. Do one of the following to activate recording:
 - Click **Record** on the **Transport** panel.
 - Click **Record** on the toolbar.

RESULT

The MIDI data is recorded into the MIDI part that is opened in the MIDI editor. If you record outside the part borders, the part is automatically enlarged.

RELATED LINKS

[Toolbar](#) on page 679

Recording MIDI

You can record MIDI using any of the basic recording methods.

When you finish recording, a part that contains MIDI events is created in the **Project** window.

NOTE

If you perform a live recording on a VST instrument, you usually compensate the latency of the audio card by playing earlier. In consequence, the timestamps are recorded too early. If you

activate **ASIO Latency Compensation** on the track list, all recorded events are moved by the current latency setting.

The following preferences affect MIDI recording:

- Length Adjustment
- Snap MIDI Parts to Bars
- MIDI Record Catch Range in ms
- ASIO Latency Compensation Active by Default

You can find them on the **MIDI** and **Record-MIDI** page of the **Preferences** dialog.

RELATED LINKS

[Basic Recording Methods](#) on page 223

[MIDI](#) on page 1012

[Record - MIDI](#) on page 1019

Recording Different Types of MIDI Messages

You can record different types of MIDI messages.

- To specify which event types are recorded, select **File > Preferences > MIDI > MIDI Filter** and deactivate the options for the type of MIDI message that you want to record.

RELATED LINKS

[MIDI - MIDI Filter](#) on page 1016

Recording MIDI Notes

If you press and release a key on your synthesizer or on another MIDI keyboard, the following messages are recorded:

- Note On (key down)
- Note Off (key up)
- MIDI channel

NOTE

Normally, the MIDI channel information is overridden by the MIDI channel setting for the track. However, if you set the track to the **Any** MIDI channel, the notes will be played back on their original channels.

Recording Continuous Messages

Pitchbend, aftertouch, and controllers, such as modulation wheel, sustain pedal, volume, etc. are considered as MIDI continuous events, as opposed to the momentary key down and key up messages.

You can record continuous messages together or independently from the notes, that is, afterwards or before.

You can record continuous messages on their own tracks, separately from the notes to which they belong. As long as you set the two tracks to the same output and MIDI channel, it will appear to the MIDI instrument as if you made the two recordings at the same time.

Recording Program Change Messages

When you switch from one program to another on your synthesizer or on another MIDI keyboard, a number corresponding to that program is sent out via MIDI as a Program Change message.

You can record Program Change Messages together or independently from the notes, that is, afterwards or before.

You can record Program Change Messages on their own tracks, separately from the notes to which they belong. As long as you set the two tracks to the same output and MIDI channel, it will appear to the MIDI instrument as if you made the two recordings at the same time.

Recording System Exclusive Messages

System Exclusive (SysEx) messages are special types of MIDI messages that are used to send data that only makes sense to a unit of a certain make and type.

SysEx can be used to transmit a list of the numbers that make up the settings of one or more sounds in a synth.

Reset Function

The **Reset** function sends out note-off messages and resets controllers on all MIDI channels. This is sometimes necessary if you experience hanging notes, constant vibrato, etc. when punching in and out on MIDI recordings with pitchbend or controller data.

- To perform a MIDI reset manually, select **MIDI > Reset**.
- If you want Cubase to perform a MIDI reset on stop, select **File > Preferences > MIDI** and activate **Reset on Stop**.
- If you want Cubase to insert a reset event at the end of a recorded part, select **File > Preferences > MIDI** and activate **Insert Reset Events after Record**.

This resets controller data such as sustain, aftertouch, pitchbend, modulation, and breath control. This is useful if a MIDI part is recorded and the sustain pedal is still held after stopping recording. Usually, this would cause all following parts to be played with sustain, as the pedal off command was not recorded.

RELATED LINKS

[MIDI](#) on page 1012

MIDI Record Modes

By selecting a **MIDI Record Mode** you decide what happens to any existing parts on the track where you are recording. MIDI tracks can play back all events in overlapping parts. If you record several parts in the same locations or move parts so that they overlap, you will hear the events in all parts.

- To access the record modes, select **Transport > MIDI Record Mode**.
You can also access the **MIDI Record Modes** by clicking to the right of the MIDI symbol in the **Record Modes** section in the **Transport** panel.

MIDI Record Mode

New Parts

Existing parts that are overlapped by a new recording are kept. The new recording is saved as a new part.

Merge

Existing events in parts that are overlapped by a new recording are kept. The newly recorded events are added to the existing part.

Replace

Existing events in parts that are overlapped by a new recording are replaced.

NOTE

In **Merge** or **Replace** mode you can activate **Record in Editor** to record MIDI data in the editor. For this to work, the editor must have the focus. Otherwise, the data is recorded on the MIDI track in the **Project** window.

MIDI Cycle Record Mode

When you record MIDI in cycle mode, the result not only depends on the MIDI record mode, but also on the cycle record mode that is selected in the **MIDI Cycle Record Mode** section.

Mix

For each completed lap, everything you record is added to what was previously recorded. This is useful for building up rhythm patterns. Record a hi-hat part on the first lap, the bass drum part on the second lap, etc.

Overwrite

As soon as you play a MIDI note or send any MIDI message, all MIDI that you have recorded on previous laps is overwritten from that point. Make sure that you stop playing before the next lap begins. Otherwise, you will overwrite the entire take.

Keep Last

Each completed lap replaces the previously recorded lap. If you deactivate recording or press **Stop** before the cursor reaches the right locator, the previous take will be kept. If you do not play or input any MIDI during a lap, nothing happens, and the previous take will be kept.

Stacked

Each recorded cycle lap is turned into a separate MIDI part, and the track is divided into lanes, one for each cycle lap. The parts are stacked above each other, each on a different lane. All takes but the last one are muted.

Mix Stacked

Same as **Stacked**, but parts are not muted.

RELATED LINKS

[Transport Menu](#) on page 207

[Transport Panel Sections](#) on page 205

Quantizing MIDI Recordings

Cubase can automatically quantize MIDI notes on recording.



- To enable automatic quantizing, open the **Transport** panel and in the **Record Mode** section, click in the **MIDI Record Modes** field, and activate **Auto Quantize**. The notes that you record are automatically quantized according to the quantize settings.

RELATED LINKS

[Quantizing MIDI and Audio](#) on page 241

[Quantize Panel](#) on page 245

Recovering MIDI Recordings

Cubase allows you to recover MIDI recordings.

Enabling Retrospective MIDI Record

The **Retrospective MIDI Record** setting allows you to capture any MIDI notes that you play in Stop mode or during playback and turn them into a MIDI part after the fact. This is possible because Cubase can capture MIDI input in buffer memory, even when not recording.

PROCEDURE

1. Select **File > Preferences > Record-MIDI**.
2. Enable **Retrospective Record** and specify a **Retrospective Record Buffer Size**. This activates the buffering of MIDI input.
3. In the MIDI track list, activate **Record Enable**.
4. Play some MIDI material either in Stop mode or during playback.
5. Select **Transport > Retrospective MIDI Record**.

RESULT

The content of the MIDI buffer is turned into a MIDI part on the record-enabled track, and the captured notes end up exactly where you played them in relation to the project.

RELATED LINKS

[Record - MIDI](#) on page 1019

Remaining Record Time

The **Record Time Max** display lets you see how much time you have left for recording.

51h 25min

The available time depends on the current setup, for example, on the amount of tracks that are record-enabled, the sample rate for your project, and the available hard disk space.

- To open the display, select **Devices > Record Time Max**.

NOTE

The remaining record time is also shown in the status line above the track list.

If you use individual record folders to store your tracks on different drives, the time display refers to the medium with the least storage space available.

Lock Record

The **Lock Record** function prevents you from accidentally deactivating the record mode.

- Select **File > Key Commands** and in the **Transport** category, assign key commands to the **Lock Record** and **Unlock Record** commands.

If **Lock Record** is activated and you want to enter Stop mode, a dialog opens in which you need to confirm that you want to stop recording. You can also use the **Unlock Record** key command first and then enter Stop mode as usual.

NOTE

An automatic punch out at the right locator position will be ignored in **Lock Record** mode.

Quantizing MIDI and Audio

Quantizing means moving recorded audio or MIDI and positioning it on the nearest grid position that is musically relevant. Quantizing is designed to correct errors, but you can also use it in a creative way.

You can quantize audio and MIDI to a grid or to a groove. You can also quantize multiple audio tracks simultaneously.

Audio and MIDI can be quantized at the same time. However, what exactly happens during quantizing differs for audio and MIDI:

- Audio quantizing affects the audio event starts or the content of your audio.
- MIDI quantizing can affect the starts of MIDI events in a part, the MIDI event lengths, or the MIDI event ends.

NOTE

Quantizing is based on the original position of the events. Therefore, you can freely try out different quantize settings without the risk of destroying anything.

RELATED LINKS

[Quantizing Audio Event Starts](#) on page 243

[Quantizing Audio Event Lengths \(AudioWarp Quantizing\) \(Cubase Pro only\)](#) on page 244

[Quantizing MIDI Event Starts](#) on page 242

[Quantizing MIDI Event Lengths](#) on page 243

[Quantizing MIDI Event Ends](#) on page 243

Quantize Functions

The quantize functions are available in the **Edit** menu and in the **Snap/Quantize** section of the **Project** window toolbar.

Quantize Functions on the Edit Menu

Quantize

Quantizes audio or MIDI event starts.

Reset Quantize

Reverts your audio or MIDI to its original, unquantized state, and resets any length changes that you performed using the **Scale Length/Legato** slider in the **Quantize Panel**.

Quantize Panel

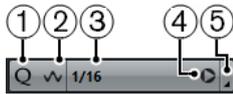
Opens the **Quantize Panel**.

Advanced Quantize

From this submenu you can select the following functions:

- **Quantize MIDI Event Lengths**
Cuts off the ends of selected MIDI events so that the events match the length quantize value. The start positions are kept.
- **Quantize MIDI Event Ends**
Moves the ends of MIDI events to the nearest grid positions.
- **Freeze MIDI Quantize**
Makes the start and end positions of MIDI events permanent. This function is useful in situations where you want to quantize a second time, based on the current quantized positions rather than the original positions.
- **Create Groove Quantize Preset**
Creates a groove quantize map based on hitpoints that you have created in the **Sample Editor**.

Quantize Functions on the Project Window Toolbar



1. **Iterative Quantize On/Off**
Activates/Deactivates iterative quantize.
2. **AudioWarp Quantize On/Off**
Activates AudioWarp quantizing.
3. **Quantize Presets**
Allows you to select a quantize or a groove preset.
4. **Apply Quantize**
Applies the quantize settings.
5. **Open Quantize Panel**
Opens the **Quantize Panel**.

Quantizing MIDI Event Starts

PREREQUISITE

You have set up a quantize grid on the **Quantize Presets** pop-up menu on the **Project** window toolbar.

PROCEDURE

1. Perform one of the following actions:
 - In the **Key Editor**, select the MIDI events that you want to quantize.
 - In the **Project** window, select a MIDI part.
2. Select **Edit > Quantize**.

RESULT

The starts of the selected MIDI events or all events of the selected MIDI part are quantized. Events that do not match exact note positions are moved to the closest grid position. The note lengths are maintained.

Quantizing MIDI Event Lengths

PREREQUISITE

You have set up a length quantize value on the **Length Quantize** pop-up menu on the **Key Editor** toolbar.

PROCEDURE

1. Perform one of the following actions:
 - In the **Key Editor**, select the MIDI events that you want to quantize.
 - In the **Project** window, select a MIDI part.
2. Select **Edit > Advanced Quantize > Quantize MIDI Event Lengths**.

RESULT

The ends of the selected MIDI events are cut off so that the events match the length quantize value. The start positions are kept.

NOTE

If you have selected **Quantize Link**, the events are resized according to the grid that is set up in the **Quantize Presets** pop-up menu. The **Swing**, **Tuplet**, and **Catch Range** settings on the **Quantize Panel** are taken into account.

Quantizing MIDI Event Ends

PREREQUISITE

You have set up a quantize grid on the **Quantize Presets** pop-up menu on the **Project** window toolbar.

PROCEDURE

1. Perform one of the following actions:
 - In the **Key Editor**, select the MIDI events that you want to quantize.
 - In the **Project** window, select a MIDI part.
2. Select **Edit > Advanced Quantize > Quantize MIDI Event Ends**.

RESULT

The ends of the MIDI events are moved to the nearest grid positions.

Quantizing Audio Event Starts

PREREQUISITE

You have set up a quantize grid on the **Quantize Presets** pop-up menu on the **Project** window toolbar.

PROCEDURE

1. In the **Project** window, select an audio event, a sliced loop, or an audio part.
 2. Select **Edit > Quantize**.
-

RESULT

The event snap point, or, if not available, the start of the audio event, is quantized. Event starts that do not match exact note positions are moved to the closest grid positions.

NOTE

If you use the **Quantize** function on an audio part, the starts of the events inside the part are quantized.

Quantizing Audio Event Lengths (AudioWarp Quantizing) (Cubase Pro only)

You can quantize an audio event or an audio selection range by applying time stretch to the content of the audio event.

PROCEDURE

1. Perform one of the following actions:
 - Select the audio event that you want to quantize.
 - Select a range of the event that you want to quantize.
 2. On the toolbar, activate **AudioWarp Quantize**.
 3. Perform one of the following actions:
 - Click **Quantize Presets**, and select a quantize grid preset from the pop-up menu.
 - Click **Open Quantize Panel**, and define the quantize grid with the available parameters.
 4. Select **Edit > Quantize**.
-

RESULT

The audio event is quantized, that is, its warp markers are aligned to the quantize grid by applying time stretch, and the audio sections between the warp markers are stretched or compressed to fit into the time interval that you set up on the **Quantize Presets** pop-up menu.

NOTE

If you use a quantize value of 1/4 on audio that is based on 16th notes, the warp markers at the 1/4 note positions are quantized to the grid, and the remaining warp markers are moved, keeping the relative distances between the warp markers.

RELATED LINKS

[Quantize Panel](#) on page 245

[Slices](#) on page 452

Quantizing Multiple Audio Tracks (Cubase Pro only)

You can quantize multiple audio tracks at the same time.

PROCEDURE

1. Select **Project > Add Track > Folder**.
2. Move all audio tracks that you want to quantize into the folder track.

NOTE

The audio on all tracks must have the same start and end positions.

3. Select the folder track and activate **Group Editing** in the track list.
4. On the **Project** window toolbar, click **Open Quantize Panel** to open the **Quantize Panel**.
5. Make your settings in the **Slice Rules** section of the **Quantize Panel**, and click **Slice**.
The audio events in the edit group are sliced.
6. Make your settings in the quantize section of the **Quantize Panel**, and click **Quantize**.
The sliced events are quantized.
7. Optional: to correct overlaps or gaps in the quantized audio, make your settings in the **Crossfades** section of the **Quantize Panel**, and click **Crossfade**.

RESULT

The audio events are quantized.

RELATED LINKS

[Quantize Panel](#) on page 245

[Group Editing Mode \(Cubase Pro only\)](#) on page 198

AudioWarp Quantizing Multiple Audio Tracks (Cubase Pro only)

You can use warp markers for quantizing multiple audio tracks. However, AudioWarp quantizing does not maintain phase coherence.

PROCEDURE

1. Select **Project > Add Track > Folder**.
2. Move all audio tracks that you want to quantize into the folder track.

NOTE

The audio on all tracks must have the same start and end positions.

3. Select the folder track and activate **Group Editing** in the track list.
4. On the **Project** window toolbar, activate **AudioWarp Quantize On/Off**.
5. Click **Open Quantize Panel** to open the **Quantize Panel**.
6. Make your settings in the **Warp Marker Creation Rules** section of the **Quantize Panel**, and click **Create**.
7. Make your settings in the quantize section of the **Quantize Panel**, and click **Quantize**.

RESULT

AudioWarp quantizing is applied to all tracks in the edit group.

RELATED LINKS

[Quantize Panel](#) on page 245

[Group Editing Mode \(Cubase Pro only\)](#) on page 198

Quantize Panel

The **Quantize Panel** allows you to define how to quantize audio or MIDI to the grid or to a groove. Depending on what method you choose, different parameters are shown.

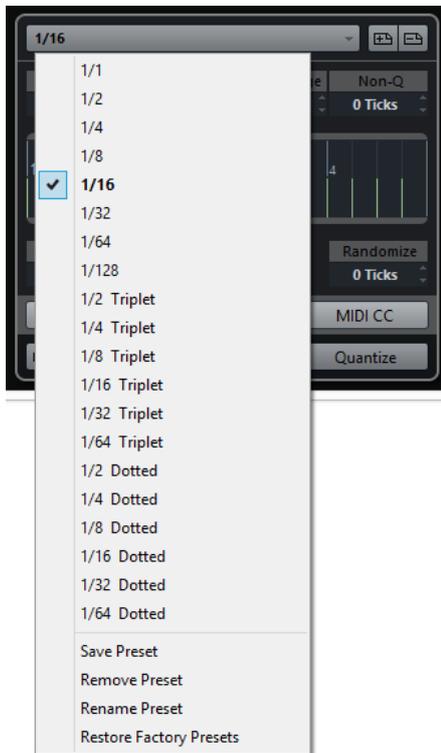
To open the **Quantize Panel**, perform one of the following actions:

- Click **Open Quantize Panel** on the toolbar.
- Select **Edit > Quantize Panel**.



Quantize Presets

To the top of the **Quantize Panel** the quantize presets are shown. Here, you can load and save presets that include all settings for quantizing.



Select Preset

Allows you to select a preset.

Save Preset

Allows you to save the current settings as a preset, so that they become available on all **Quantize Presets** pop-up menus.

Remove Preset

Allows you to remove the selected preset.

Rename Preset

Opens a dialog where you can rename the selected preset.

Restore Factory Presets

Allows you to restore the factory presets.

Creating Groove Quantize Presets

You can create a groove quantize map based on hitpoints that you have created in the **Sample Editor**.

PROCEDURE

- 1.** In the **Project** window, double-click the audio event from which you want to extract the timing.
The **Sample Editor** opens.
- 2.** Open the **Hitpoints** section.
The hitpoints for the audio event are detected and displayed automatically.
- 3.** Click **Create Groove**.
The groove is extracted.

RESULT

The groove is extracted from the audio event and made available in the **Quantize Presets** pop-up menu on the **Project** window toolbar.

AFTER COMPLETING THIS TASK

Open the **Quantize Panel** and save the groove as a preset.

RELATED LINKS

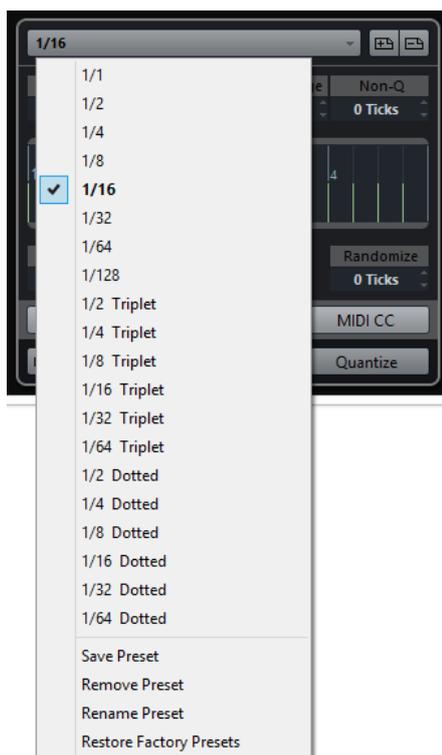
[Creating a Groove Quantize Map](#) on page 454

[Quantize Presets](#) on page 246

Options For Quantizing to a Musical Grid

You can use the musical grid to quantize your recorded music.

- To access the options for quantizing to a musical grid, select a musical time format from the **Select Preset** pop-up menu.



The following options become available:

Grid

Allows you to select the basic value for the quantize grid.

Swing

Offsets every second position in the grid, creating a swing or shuffle feel.

NOTE

Swing is only available if **Grid** is set to a straight value and **Tuplet** is deactivated.

Catch Range

Allows you to set a value that determines that quantizing affects only audio or MIDI within the set distance from the grid lines. This is reflected in the grid display.

Non-Quantize

Creates a safe zone before and after the quantize positions. If you specify a distance in ticks (120 ticks = one 16th note), events that lie within this zone are not quantized. This way, slight variations are kept.

Grid Display

Shows the quantize grid. Quantized audio or MIDI is moved to the positions indicated by the vertical grid lines.

Tuplet

Creates rhythmically more complex grids by dividing the grid into smaller steps, and thereby creating n-tuplets.

Randomize

Allows you to set a distance in ticks, so that your audio or MIDI is quantized to random positions within the specified distance from the quantize grid. This allows for slight variations and, at the same time, prevents your audio or MIDI from ending up too far away from the grid.

iQ Mode

Applies a loose quantization so that your audio or MIDI moves only part of the way to the closest quantize grid position. The **Iterative Strength** value to the right determines how close your audio or MIDI moves towards the grid.

NOTE

Iterative quantizing is based on the current, quantized positions and not on the original event positions. You can repeatedly use the **iQ** mode to gradually move your audio or MIDI closer to the quantize grid until you have found the right timing.

AudioWarp

Quantizes the content of your audio event by applying time stretch. The warp markers are aligned to the defined quantize grid.

MIDI CC

Moves controllers related to MIDI notes (pitchbend, etc.) automatically with the notes when these are quantized.

Reset Quantize

Resets your audio or MIDI to its original, unquantized state.

IMPORTANT

This function has no effect on an event that was moved manually.

Auto

Applies any changes immediately to the selected parts or events. A way of using this feature is to set up a playback loop and adjust the settings until you are satisfied with the result.

Quantize

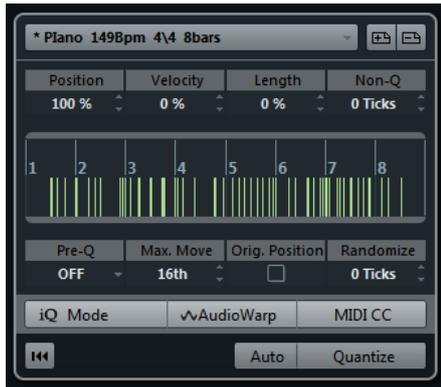
Applies your settings.

Options for Quantizing to a Groove

You can generate a timing grid from a MIDI part or an audio loop, and use this groove to quantize your recorded music. This way, you can recreate the rhythmic feel of this specific event or part.

To access the options for quantizing to a groove, select a MIDI part, from an audio loop, an audio event with hitpoints, or sliced audio, and perform one of the following actions:

- Drag the part or event and drop it on the grid display in the middle of the **Quantize Panel**.
- Select **Edit > Advanced Quantize > Create Groove Quantize Preset**.



The following options become available:

Position

Determines how much the timing of the groove affects the music.

Velocity (MIDI Only)

Determines how much the velocity values within the groove affect the music.

NOTE

Not all grooves contain velocity information.

Length (MIDI Only)

Allows you to specify how much the lengths of the notes are affected by the groove.

NOTE

For drums, the Length setting is ignored.

Non-Q

Allows you to create a safe zone before and after the quantize positions. If you specify a distance in ticks (120 ticks = one 16th note), events that lie within this zone are not quantized. This way, slight variations are kept.

Grid Display

Shows the quantize grid. Quantized audio or MIDI is moved to the positions indicated by the vertical grid lines.

Pre-Q

Allows you to select a musical grid to which you can quantize your audio or MIDI first. This gets the notes closer to their groove destination.

NOTE

If you apply a shuffle groove to a 16th-note pattern, for example, set up a pre-quantize value of 16 to straighten up the timing before applying the groove quantizing.

Max. Move

Allows you to select a note value to specify a maximum distance that the audio or MIDI is moved.

Orig. Position

Sets the original starting position of the quantized material as starting point of the quantizing. This allows you to synchronize material that does not start from bar 1 of the project.

Randomize

Allows you to set a distance in ticks so that your audio or MIDI is quantized to random positions within the specified distance from the quantize grid. This allows for slight variations and, at the same time, prevents your audio or MIDI from ending up too far away from the grid.

iQ Mode

Applies a loose quantization so that your audio or MIDI moves only part of the way to the closest quantize grid position. The **Iterative Strength** value to the right determines how close your audio or MIDI moves towards the grid.

NOTE

Iterative quantizing is based on the current, quantized positions and not on the original event positions. You can repeatedly use the **iQ** mode to gradually move your audio or MIDI closer to the quantize grid until you have found the right timing.

AudioWarp

Quantizes the content of your audio event by applying time stretch. The warp markers are aligned to the defined quantize grid.

MIDI CC

Moves controllers related to MIDI notes (pitchbend, etc.) automatically with the notes when these are quantized.

Reset Quantize

Resets your audio or MIDI to its original, unquantized state.

IMPORTANT

This function has no effect on an event that was moved manually.

Auto

Applies any changes immediately to the selected parts or events. A way of using this feature is to set up a playback loop and adjust the settings until you are satisfied with the result.

Quantize

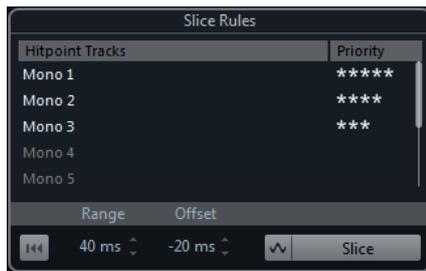
Applies your settings.

RELATED LINKS

[Creating Groove Quantize Presets](#) on page 247

Options for Quantizing Multiple Audio Tracks

If you quantize multiple audio tracks, the **Slice Rules** section becomes available in the **Quantize Panel**. Here, you determine how the audio events are sliced at the hitpoints.



- To access the **Slice Rules** section, move your audio tracks to a folder track, activate **Group Editing**, and open the **Quantize Panel**.

Hitpoint Tracks

Lists all audio tracks of your edit group that have hitpoints.

Priority

Click and drag to the right or to the left to specify a priority. The hitpoints of the track with the highest priority determine slice positions for the audio on all tracks. If the zoom factor is high enough, cutting positions are marked in the **Project** window by vertical lines.

Range

Allows you to specify the distance in which two hitpoints on different tracks are considered to mark the same beat.

Offset

Allows you to set an offset that determines how far before the actual hitpoint position an audio event is sliced. This allows for slight variations of the cutting position and is useful if you want to create crossfades at the slice positions. Furthermore, it helps to avoid cutting off signals on tracks that do not contain any hitpoints.

AudioWarp Quantize On/Off

Activate this button to quantize the content of your audio event by applying time stretch. This enables the **Warp Marker Creation Rules** section that allows you to specify a priority. The hitpoints of the track with the highest priority determines warp marker positions for the audio on all tracks.

Slice

Slices all audio events of the edit group, and sets the event snap points to the position of the hitpoint with the highest priority.

Reset

Undoes the slicing and restores the original state of the audio events.

RELATED LINKS

[Options for AudioWarp Quantizing Multiple Audio Tracks](#) on page 253

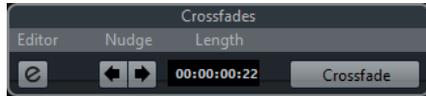
[Crossfades Section](#) on page 253

[AudioWarp Quantizing Multiple Audio Tracks \(Cubase Pro only\)](#) on page 245

[Group Editing Mode \(Cubase Pro only\)](#) on page 198

Crossfades Section

The **Crossfades** section becomes available after you have sliced the audio events. The functions in this section allow you to correct the overlaps or the gaps that might appear due to the re-positioning of your audio.



Clicking **Crossfade** cuts the end of the first event at the start position of the following event (in case of overlaps), and stretches the second event until it starts at the end of the previous event (in case of gaps).

In some cases, you might want to achieve seamless transitions, applying crossfades after closing the gaps. For this purpose, use the following parameters:

Open Crossfade Editor

Opens the **Crossfade** editor, where you can specify curve kind, length, and other parameters for your crossfades.

Nudge Crossfade Left/Right

Moves the fade area in the audio event to the left or to the right in steps of one millisecond. This is useful if the **Offset** value in the **Slice Rules** section was not high enough, and you want to avoid that the crossfade cuts an attack.

Length

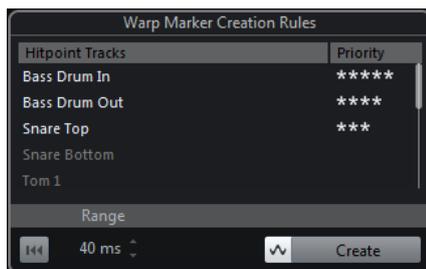
Specifies the length of the crossfade area.

RELATED LINKS

[Crossfade Editor](#) on page 262

Options for AudioWarp Quantizing Multiple Audio Tracks

The **Warp Marker Creation Rules** section becomes available when you activate AudioWarp quantizing for multiple audio tracks.



Priority

In this column, you can define a priority for each track. The track with the highest priority defines where the warp markers are created.

If you set up the same priority for several tracks, the warp marker position is defined by the track that contains the first hitpoint within the specified range. This is decided for each warp marker position anew.

- To specify a priority, click and drag to the right or to the left.
If no star is shown, the hitpoints on the corresponding track are not taken into account.

Range

Two hitpoints on different tracks are considered to mark the same beat if they are located within a certain distance from each other. The **Range** parameter specifies this distance. The following rules apply:

- If one of the tracks has a higher priority, its hitpoint is used to create the warp marker.
- If the tracks have the same priority, the first hitpoint in the range is used.

Reset

Undoes the creation of warp markers.

AudioWarp Quantize On/Off

Activates/deactivates AudioWarp quantizing. This enables the **Slice Rules** section.

Create

Creates warp markers for all the tracks.

RELATED LINKS

[Options for Quantizing Multiple Audio Tracks](#) on page 251

[AudioWarp Quantizing Multiple Audio Tracks \(Cubase Pro only\)](#) on page 245

[Group Editing Mode \(Cubase Pro only\)](#) on page 198

Fades, Crossfades, and Envelopes

Fades allow you to gradually increase or decrease the volume at the start or end of audio events or audio clips, and to create smooth transitions.

You can create the following fades:

- **Fade ins/fade outs**
Fade ins and fade outs allow you to gradually increase or decrease the volume of audio events or audio clips. Fade ins and fade outs can be either event-based or clip-based. Event-based fades are calculated in realtime when you play back audio events. You can create different fade curves for several events, even if they refer to the same audio clip.

NOTE

The more event-based fades you apply, the more processing power is used.

Clip-based fades are applied to the audio clip. Events that refer to the same clip will have the same fades.

- **Crossfades**
Crossfades allow you to create smooth transitions for consecutive audio events on the same track. Crossfades are always event-based.
- **Auto fades**
Auto fades allow you to automatically apply short fade ins and fade outs to the events on specific audio tracks. You can also apply them globally on all audio tracks. This creates smooth transitions between events.
- **Event envelopes**
Event envelopes are volume curves for audio events or audio clips. They allow for volume changes not only at the start or the end, but also within the audio or clip. They can be either event-based or clip-based.

RELATED LINKS

[Event-Based Fades](#) on page 255

[Creating Clip-Based Fades](#) on page 259

[Crossfades](#) on page 261

[Auto Fades and Crossfades](#) on page 264

[Event Envelopes](#) on page 266

Event-Based Fades

You can create event-based fade ins and fade outs. These are calculated in realtime when you play back audio events. You can create different fade curves for several events, even if they refer to the same audio clip.

There are several ways to create event-based fades:

- By using the event handles
- By using range selections

You can edit event-based fades in the **Fade** dialogs.

RELATED LINKS

[Creating and Editing Fades with the Handles](#) on page 256

[Creating and Editing Fades with the Range Selection Tool](#) on page 257

[Fade Dialog for Event-Based Fades](#) on page 258

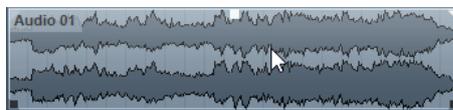
Creating and Editing Fades with the Handles

You can create and edit event-based fade ins and fade outs using the event handles. This gives you a visual feedback and allows you to apply the same fade type to several selected events.

PROCEDURE

1. Select the audio events for which you want to create fades and point at one of them with the mouse.

Triangular fade handles become visible in the upper left and right corners.



2. Perform one of the following actions:
 - Drag the left fade handle to the right to create a fade in.
 - Drag the right fade handle to the left to create a fade out.



RESULT

The fade is applied and shown in the event waveform. If you select multiple events, the same fade is applied to all selected events.

NOTE

You can change the length of the fades at any time by dragging the handles.

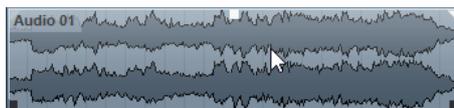
Event Handles

Audio events have a fade in and a fade out handle, as well as a volume handle. These handles provide a quick way to change the fade length or the volume of events in the **Project** window.

Event handles become visible if you point the mouse at an event or if you select events.

NOTE

To show event handles and fade curves always and not only when you point at events, in the **Preferences** dialog select **Event Display > Audio**, and activate **Show Event Volume Curves Always**.



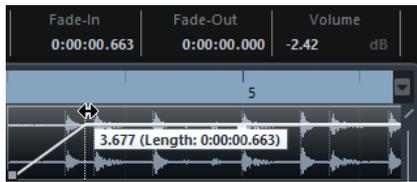
In the upper left and right corners you find triangular fade handles that allow you to change the fade in or fade out length. In the top middle you find a square handle that allows you to change the volume.

- To change the fade in length, drag the fade handle in the upper left to the right or to the left.
- To change the fade out length, drag the fade handle in the upper right to the left or to the right.
- To change the volume, drag the volume handle in the top middle up or down.

Fade and volume changes are reflected in the event waveform and on the info line.

NOTE

To change the event volume and the fades with the mouse wheel, in the **Preferences** dialog select **Editing > Audio**, and activate **Use Mouse Wheel for Event volume and Fades**. When you press **Shift** while moving the mouse wheel, and position the mouse pointer somewhere in the left half of the event, the fade in end point is moved. When the mouse pointer is in the right half of the event, the fade out start point is moved.



Creating and Editing Fades with the Range Selection Tool

You can create and edit event-based fades with the **Range Selection** tool. This allows you to apply a fade in and a fade out at the same time. Using the **Range Selection** tool is also useful if you want to create fades for multiple audio events on separate tracks.

PROCEDURE

1. On the **Project** window toolbar, select the **Range Selection** tool.
2. Perform one of the following actions:
 - To create a fade in that starts at the event start, select a range that starts at the event start.
 - To create a fade out that ends at the event end, select a range that ends at the event end.
 - To create a fade in and a fade out, select a range in the middle of the event.
 - To create fades on multiple tracks, select a range that spans multiple audio events on multiple audio tracks.
3. Select **Audio > Adjust Fades to Range**.

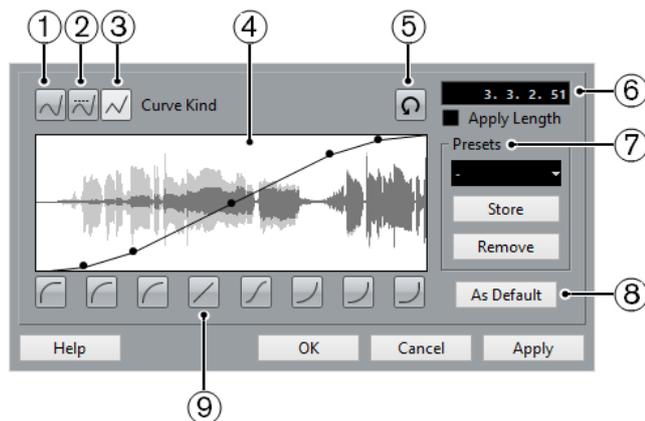
Removing Event-Based Fades

You can remove event-based fades for a whole event or for a range.

PROCEDURE

1. Perform one of the following actions:
 - To remove the fades for an event, select the event with the **Object Selection** tool.
 - To remove the fades for a range, select the fade area with the **Range Selection** tool.
2. Select **Audio > Remove Fades**.

Fade Dialog for Event-Based Fades



- To open the dialog for event-based fades, create a fade for one or more audio events, select the events and select **Audio > Open Fade Editor(s)**.

NOTE

If you select several events, you can adjust the fade curves for all selected events at the same time. This is useful if you want to apply the same type of fade in to more than one event, etc.

The available options are:

1. **Spline Interpolation**
Applies a spline interpolation to the curve.
2. **Damped Spline Interpolation**
Applies a damped spline interpolation to the curve.
3. **Linear Interpolation**
Applies a linear interpolation to the curve.
4. **Fade display**
Shows the shape of the fade curve. The resulting waveform shape is shown darker, the current waveform shape is shown lighter.
 - To add points, click the curve.
 - To change the curve shape, click and drag existing points.
 - To remove a point from the curve, drag it outside the display.
5. **Restore**
Click this button to cancel any changes you have made since opening the dialog.
6. **Fade Length field**
Use this field to enter fade lengths numerically. The format of values displayed here is determined by the time display in the **Transport** panel.
 - If you activate **Apply Length**, the value entered in the **Fade Length** value field is used when clicking **Apply** or **OK**.
 - If you set the current fade as the default fade, the length value is included as part of the default settings.
7. **Presets**
Allows you to set up presets for fade in or fade out curves.
 - To apply a stored preset, select it from the pop-up menu.
 - To rename the selected preset, double-click the name and type in a new one.

- To remove a stored preset, select it from the pop-up menu and click **Remove**.
- 8. As Default**
Click this button to save the current settings as default fade.
 - 9. Shape buttons**
Give you quick access to some common curve shapes.

Creating Clip-Based Fades

You can create and edit clip-based fade ins and fade outs. These fades are applied to the audio clip. Events that refer to the same clip get the same fades.

PROCEDURE

1. In the **Project** window, select one or more audio events or a range for which you want to create a fade.
The length of your selection determines the length of the fade area.
 2. Perform one of the following actions:
 - To create a fade in, select **Audio > Process > Fade In**.
 - To create a fade out, select **Audio > Process > Fade Out**.
 3. In the corresponding fade dialog, click the **Curve Kind** buttons to specify a fade curve, or click and drag with the mouse in the curve display to draw in a curve.
 4. Optional: Click **Preview** to hear the effect of the specified fade on the selected audio event.
 5. Click **Process** to apply the fade to the audio event.
If other audio events refer to the same clip, you can decide how to proceed.
-

RESULT

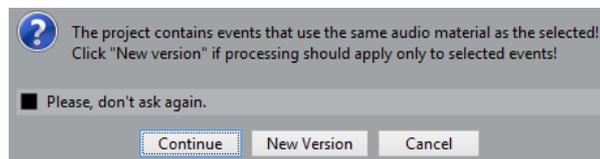
The fade is processed. You can remove or modify the fades at any time using the **Offline Process History**.

RELATED LINKS

- [Offline Process History](#) on page 410
- [On Processing Shared Clips](#) on page 259
- [Fade Dialog for Clip-Based Fades](#) on page 260

On Processing Shared Clips

If several events refer to the same audio clip, this clip is a shared clip. If you edit one of the events that refer to a shared clip, you can decide if you want to apply the processing to all events referring to this clip.



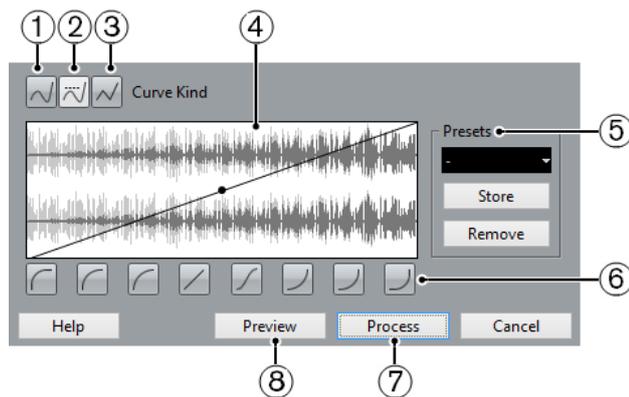
Continue

Click **Continue** to apply the processing to all events that refer to the audio clip.

New Version

Click **New Version** to create a separate, new version of the audio clip for the selected event.

Fade Dialog for Clip-Based Fades



- To open the dialog for clip-based fades, select one or more audio events and select **Audio > Process > Fade In** or **Audio > Process > Fade Out**.

NOTE

If you select several events, you can adjust the fade curves for all selected events at the same time. This is useful if you want to apply the same type of fade in to more than one event, etc.

The available options are:

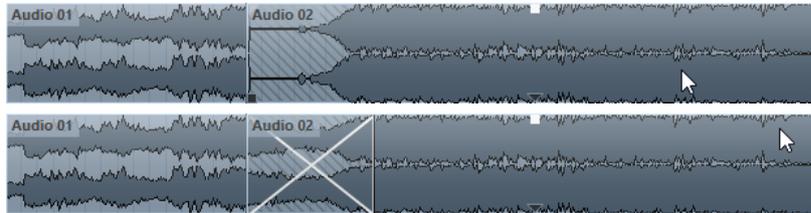
1. **Spline Interpolation**
Applies a spline interpolation to the curve.
2. **Damped Spline Interpolation**
Applies a damped spline interpolation to the curve.
3. **Linear Interpolation**
Applies a linear interpolation to the curve.
4. **Fade display**
Shows the shape of the fade curve. The resulting waveform shape is shown darker, the current waveform shape is shown lighter.
 - To add points, click the curve.
 - To change the curve shape, click and drag existing points.
 - To remove a point from the curve, drag it outside the display.
5. **Presets**
Allows you to set up presets for fade in or fade out curves.
 - To apply a stored preset, select it from the pop-up menu.
 - To rename the selected preset, double-click the name and type in a new one.
 - To remove a stored preset, select it from the pop-up menu and click **Remove**.
6. **Shape buttons**
Give you quick access to some common curve shapes.
7. **Process**
Applies the set fade curve to the clip, and closes the dialog.
8. **Preview**
Plays back the fade area. Playback repeats until you click the button again.

Crossfades

Crossfades allow you to create smooth transitions for consecutive audio events on the same track. Crossfades are always event-based.

You can only create crossfades if the consecutive events or their respective clips overlap.

- If the audio events overlap, a crossfade of the default shape (linear, symmetric) is applied in the overlapping area.



NOTE

You can edit the default crossfade length and shape in the **Crossfade** editor.

- If the respective audio clips overlap, the two events are resized so that they overlap, and a crossfade of the default length and shape is applied in the overlapping area.
- If neither the audio events nor the clips do overlap, a crossfade cannot be created.

RELATED LINKS

[Crossfade Editor](#) on page 262

Creating Crossfades

PROCEDURE

1. Perform one of the following actions:
 - To create a crossfade between two events, select the **Object Selection** tool, and select two consecutive audio events.
 - To create a crossfade to a selected range between two events, select the **Range Selection** tool, and select a range covering the area where you want to apply a crossfade.
2. Select **Audio > Crossfade** or use the key command **X**.

RESULT

The crossfade is applied.

Changing the Crossfade Length

PROCEDURE

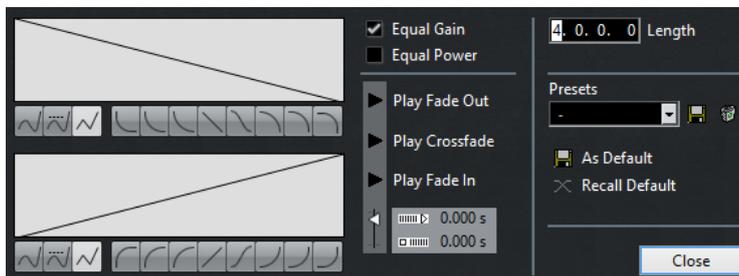
1. Select the **Range Selection** tool.
2. Select a range between two events that covers the length of the crossfade you want to apply.
3. Select **Audio > Adjust Fades to Range**.

RESULT

The crossfade length is adjusted to the selected range.

Crossfade Editor

The **Crossfade** editor allows you to edit crossfades. It contains fade-in and fade-out curve settings, and common settings.



- To open the **Crossfade** editor, select one or both crossfaded events, and select **Audio > Crossfade**, or double-click the crossfade zone.

Fade curve displays

Shows the shape of the fade out and fade in curve, respectively.

- To add points, click a curve.
- To change the fade shape, click and drag existing points.
- To remove a point, drag a point outside the display.

Curve Kind and Shape buttons

Determine whether the corresponding fade curve uses **Spline Interpolation** (left button), **Damped Spline Interpolation** (middle button) or **Linear Interpolation** (right button).



The curve shape buttons give you quick access to some common curve shapes.



Equal Gain

Adjusts the fade curves so that the summed fade in and fade out amplitudes are the same all along the crossfade region. This is often suitable for short crossfades.

Equal Power

Adjusts the fade curves so that the energy (power) of the crossfade is constant all along the crossfade region.

Equal Power curves have only one editable curve point. You cannot change the curve shape if this mode is selected.

Play buttons

- To audition the whole crossfade, click **Play Crossfade**.
- To audition the fade out part of the crossfade, click **Play Fade Out**.
- To audition the fade in part of the crossfade, click **Play Fade In**.

You can set up key commands for this in the following categories of the **Key Commands** dialog.

Pre-roll and Post-roll

- To start playback before the fade area, activate **Use pre-roll**.
- To stop playback after the fade area, activate **Use post-roll**.

- To adjust the pre-roll time, use the **Pre-roll Amount** value field.
- To adjust the post-roll time, use the **Post-roll Amount** value field.

Audition Level

Allows you to set the audition level.

Length

Specifies the length of the crossfade area. Cubase tries to center the crossfade, i.e. the length change will be applied equally to both sides. To be able to resize a crossfade, it must be possible to resize the corresponding event. For example, if the fade out event already plays its audio clip to the end, its end point cannot be moved any further to the right.

Presets

Click **Store** to the right of the **Presets** pop-up menu to store the crossfade settings so that you can apply them to other events.

- To rename a preset, double-click on the name and type in a new one.
- To remove a preset, select it on the pop-up menu and click **Delete**.

Default buttons

Click **As Default** to store the current settings as default. Default settings are used whenever you create new crossfades.

Click **Recall Default** to apply the curves and settings of the default crossfade to the **Crossfade** editor.

RELATED LINKS

[Key Commands](#) on page 938

[Event Handles](#) on page 256

[Auto-Scroll](#) on page 215

Removing Crossfades

PROCEDURE

1. Perform one of the following actions:
 - Select the **Object Selection** tool and select one of the crossfaded events.
 - Select the **Range Selection** tool and select the crossfades you want to remove.
2. Select **Audio > Remove Fades**.

RESULT

The selected crossfades are removed.

NOTE

You can also remove a crossfade by clicking and dragging it outside the track.

Auto Fades and Crossfades

Cubase features an **Auto Fade** function that can be set both globally, and separately for each audio track. Auto fades allow you to create smoother transitions between events by applying fade ins and fade outs with a length between 1 and 500 ms.

IMPORTANT

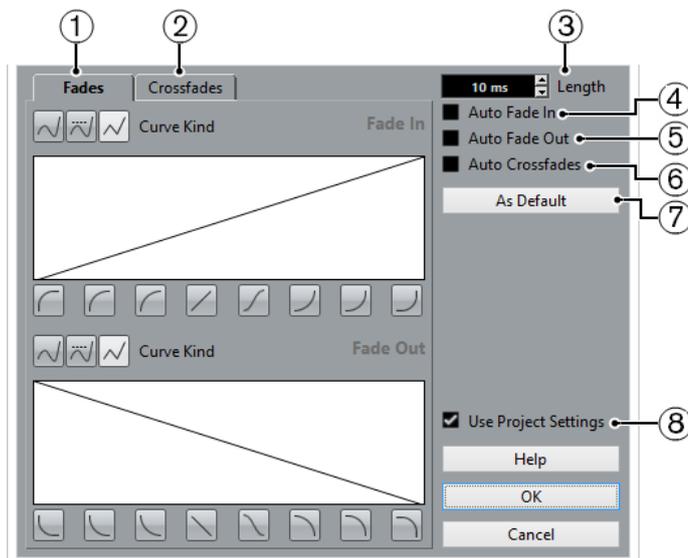
As event-based fades are calculated in realtime during playback, applying auto fades to a higher number of audio events results in a higher demand on the processor.

NOTE

Auto fades are not indicated by fade lines.

Auto Fades Dialog

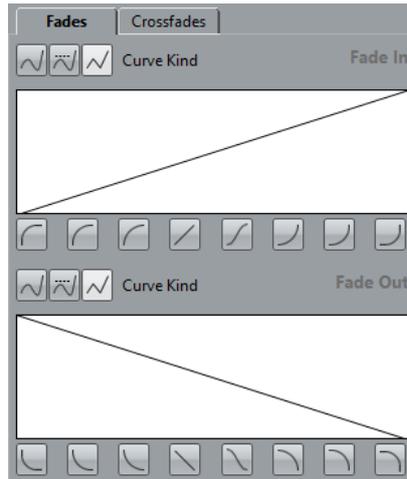
The **Auto Fades** dialog allows you to set up auto fades and crossfades for the whole project, or separately for each audio track.



- To open the global **Auto Fades** dialog, select **Project > Auto Fades Settings**.
- To open the **Auto Fades** dialog for a track, right-click in the track list and select **Auto Fades Settings**.

1. Fades

Click this tab to show the settings for auto fades.

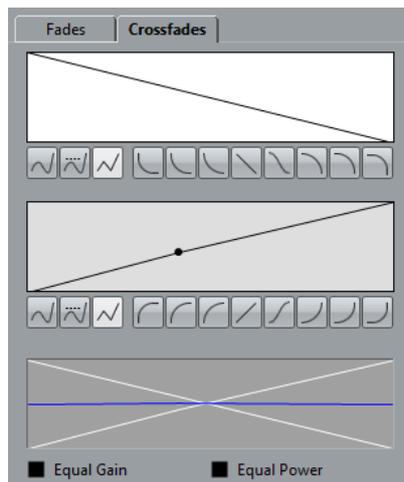


The **Curve Kind** buttons allow you to determine whether the corresponding fade curve uses **Spline Interpolation** (left button), **Damped Spline Interpolation** (middle button) or **Linear Interpolation** (right button).

The curve shape buttons give you quick access to common curve shapes.

2. **Crossfades**

Click this tab to show the settings for auto crossfades.



Equal Gain allows you to adjust the fade curves so that the summed fade in and fade out amplitudes are the same all along the crossfade region.

Equal Power allows you to adjust the fade curves so that the energy (power) of the crossfade is constant all along the crossfade region.

3. **Length**

Allows you to specify the length of the auto fades or crossfades.

4. **Auto Fade In**

Allows you to activate auto fade ins.

5. **Auto Fade Out**

Allows you to activate auto fade outs.

6. **Auto Crossfades**

Allows you to activate auto crossfades.

7. **As Default**

Allows you save your settings as default.

8. **Use Project Settings**

This is only available if you opened the **Auto Fades** dialog for individual tracks. Deactivate this, to set up and apply the settings to individual tracks only. If you want a track with individual auto fade settings to use the global settings again, activate **Use Project Settings**.

Making Global Auto Fade Settings

PROCEDURE

1. Select **Project > Auto Fades Settings**.
This opens the **Auto Fades** dialog for the project.
 2. Set up the auto fades as desired.
 3. Click **OK** to close the dialog.
-

RELATED LINKS

[Fade Dialog for Event-Based Fades](#) on page 258
[Crossfade Editor](#) on page 262

Making Auto Fade Settings for Individual Tracks

As auto fades use computing power, you might consider to turn auto fades off globally and activate them only for individual tracks.

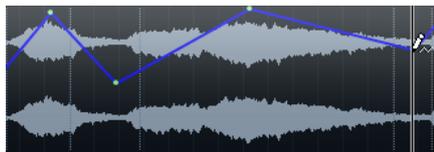
PROCEDURE

1. Perform one of the following actions:
 - Right-click the track in the track list and from the context menu, select **Auto Fades Settings**.
 - Select the track and in the Inspector, click **Auto Fades Settings**.The **Auto Fades** dialog for the track opens.
 2. Deactivate **Use Project Settings**.
Any settings you now make are applied to the track only.
 3. Set up the auto fades.
 4. Click **OK** to close the dialog.
-

Event Envelopes

Event envelopes are volume curves for audio events. They allow you to create volume changes within the event, not only at the start or end.

On the event envelopes, you can create volume changes by adding curve points with the **Draw** tool.

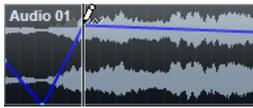


The envelope curve is a part of the audio event. If you move or copy the event, the event envelope follows.

Creating Event-Based Volume Changes

PROCEDURE

1. Zoom in on the event so that you can view its waveform properly.
2. Select the **Draw** tool and click at the position in the event where you want to change the volume.
3. Click with the **Draw** tool.



A curve point is added to the envelope curve.

4. Drag the curve point to adjust the volume curve.
-

RESULT

The volume change is created. The waveform image of the event changes according to the volume change.

Removing Event Envelopes

PROCEDURE

- Perform one of the following actions:
 - To remove a curve point from the envelope, click on it and drag it outside the event.
 - To remove an event envelope curve from a selected event, select **Audio > Remove Volume Curve**.
-

Creating Clip-Based Volume Changes

PROCEDURE

1. In the **Project** window, select the event.
 2. Select **Audio > Process > Envelope**.
 3. In the **Envelope** dialog, make your settings, and click **Process**.
-

RESULT

The volume change is created. The waveform image of the event changes according to the volume change.

RELATED LINKS

[Envelope](#) on page 398

Arranger Track

The arranger functions in Cubase allow you to work in a non-linear fashion. Using an arranger track allows you to specify how and when specific sections are played back, even in live performances. This way, you do not need to move, copy, and paste events in the **Project** window.

NOTE

There can be only one arranger track in a project.

To use the arranger functions you must add an arranger track and define arranger events. Arranger events can be of any length. They can overlap and are not bound to the start or end of existing events and parts. You can order them in a list, and add repeats as desired.



You can edit arranger events using the standard techniques. Copies from arranger events are independent from the original event.

You can create several arranger chains that allow you to save different versions of a song within the project.

You can flatten arranger chains to convert them into a linear project.

RELATED LINKS

[Adding Arranger Events on the Arranger Track](#) on page 268

[Setting up an Arranger Chain and Adding Events](#) on page 272

[Flattening the Arranger Chain](#) on page 273

Adding Arranger Events on the Arranger Track

On the arranger track, you can add arranger events that define specific sections of the project.

PREREQUISITE

Snap is activated, and **Snap Type** is set to **Events**.

PROCEDURE

1. Select **Project > Add Track > Arranger**.
The arranger track is added.
2. Select the **Draw** tool and draw an arranger event on the arranger track.
An arranger event is added.
3. Draw as many events as you need.

RESULT

The arranger events are added to your project.

AFTER COMPLETING THIS TASK

Use the functions of the **Arranger Editor** to arrange the events.

RELATED LINKS

[Setting up an Arranger Chain and Adding Events](#) on page 272

[Snap Function](#) on page 80

[Snap Types](#) on page 80

Renaming Arranger Events

When you add arranger events, they are automatically named in alphabetical order. You can change the names so that they reflect the structure of your project, Intro, Chorus, Bridge, for example.

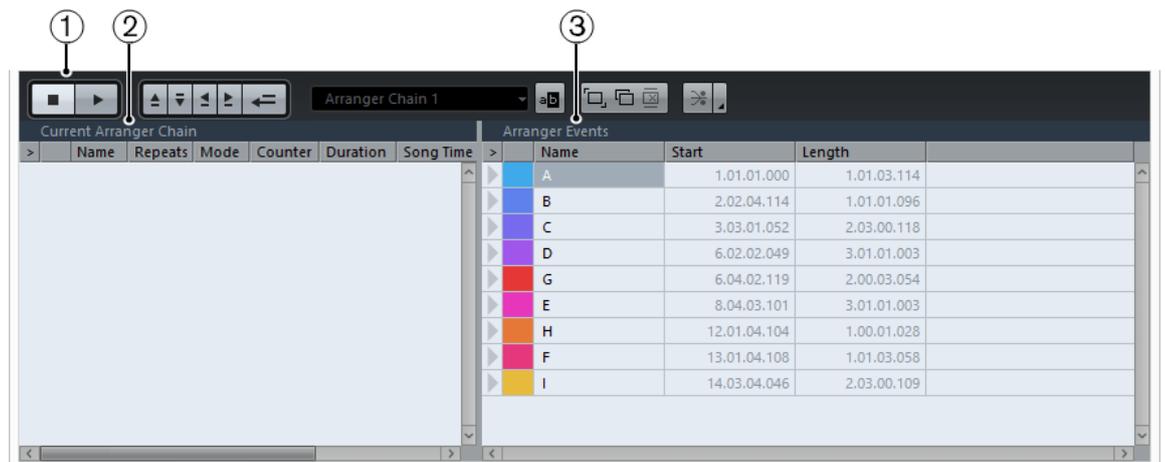
PROCEDURE

1. Select the arranger event that you want to rename.
2. Perform one of the following actions:
 - Select the event name on the info line.
 - Hold down **Alt** and double-click the name in the arranger chain.
3. Enter a new name.

Arranger Editor

The **Arranger Editor** allows you to set up arranger chains.

To open the **Arranger Editor**, click **e** in the **Inspector** or in the track list.



1. **Arranger Controls**
Shows the transport buttons, the arranger transport buttons and the arranger tools.
2. **Current Arranger Chain**

NOTE

Initially the arranger chain is empty. To fill it up, you must add events from the **Arranger Events** list.

Shows the order in which the events are played back, from top to bottom, and how many times they are repeated.

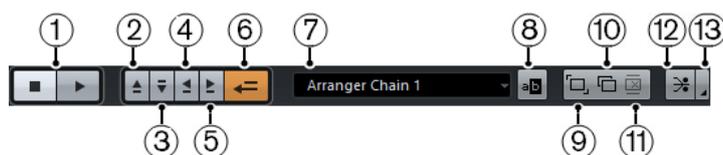
3. **Arranger Events**
Lists the available arranger events in the order they appear on the timeline.

Arranger Controls

The **Arranger Controls** are shown in the **Arranger Editor**.

NOTE

Some of these controls are also available in the **Arranger Controls** section of the **Project** window toolbar, and on the **Transport** panel.



1. **Stop/Play**
Stops/Starts playback.
2. **Previous Chain Step**
Navigates to the previous entry in the current arranger chain list.
3. **Next Chain Step**
Navigates to the next entry in the current arranger chain list.
4. **First Repeat of Current Chain Step**
Navigates to the first repeat of the current entry in the current arranger chain list.
5. **Last Repeat of Current Chain Step**
Navigates to the last repeat of the current entry in the current arranger chain list.
6. **Activate Arranger Mode**
Activates playback in arranger mode.
7. **Select Active Chain**
Allows you to select and activate an arranger chain.
8. **Rename Current Chain**
Allows you to rename the current arranger chain.
9. **Create New Chain**
Creates a new, empty arranger chain.
10. **Duplicate Current Chain**
Creates a duplicate of the current arranger chain, containing the same events.
11. **Remove Current Chain**
Removes the selected arranger chain. This is only available if you have created more than one arranger chain.

12. **Flatten**
Converts the current arranger chain into a linear project.
13. **Flatten (with Options & Preferences)**
Allows you to set up the flatten options.

Arranger Chain Repeat Modes

The **Arranger Editor** features a function that allows you to repeat and loop your arranger events. This way, you can create a sketch of a song structure.

To select one of the repeat modes, click the **Mode** column in the **Current Arranger Chain** list.

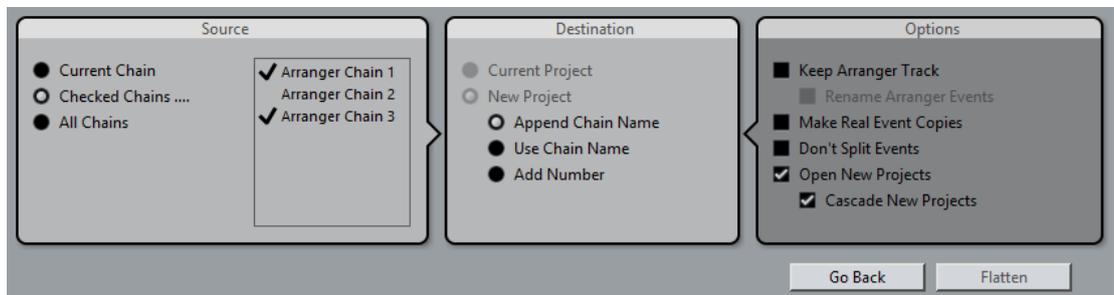
1. **Normal**
Plays back the arranger chain exactly the way you set it up.
2. **Repeat forever**
Repeats the current arranger event in a loop until you click another event in the **Arranger Editor** or until you click **Play** once again.
3. **Pause after Repeats**
Pauses playback after all repeats of the current arranger event have been played back.

NOTE

During playback, the **Counter** column indicates which repetition of the event is playing.

Flattening Options & Preferences

To activate the flattening options, click **Flatten (with Options & Preferences)**.



In the **Source** section, you can specify which arranger chains are flattened.

Current Chain

Flattens the current chain only.

Checked Chains

Opens a list of the available arranger chains where you can activate the arranger tracks that you want to flatten.

All Chains

Flattens all arranger chains of the current project.

The **Destination** section allows you to choose where the result of the flattening is saved.

Current Project

This is only available if **Source** is set to **Current Chain**. Activate this option if you want to save the flattened chain in the current project.

New Project

Allows you to flatten one or more chains in a new project with the following naming options:

- **Append Chain Name**
Appends the chain names to the project name.
- **Use Chain Name**
Names the new projects after the current arranger chains.
- **Add Number**
Names the new projects after the old ones, and adds a number.

The **Options** section contains further settings.

Keep Arranger Track

Keeps the arranger track after flattening. Activate **Rename Arranger Events** to append numbers to the events.

Make Real Event Copies

Allows you to create real copies of the arranger track instead of shared copies.

Don't Split Events

Excludes MIDI notes that start before or are longer than the arranger event. Only MIDI notes that begin and end inside the arranger event are taken into account.

Open New Projects

Creates a new project for every flattened arranger chain. If you activate **Cascade New Projects**, the opened projects are cascaded.

RELATED LINKS

[Flattening the Arranger Chain](#) on page 273

Setting up an Arranger Chain and Adding Events

In the **Arranger Editor** you can set up arranger chains and add events to them.

PROCEDURE

1. Click **e** to open the **Arranger Editor**.
2. Activate **Activate Arranger Mode**.



3. Perform one of the following actions to add arranger events to the arranger chain:
 - Double-click an event in the **Arranger Events** list.
 - Select one or more events in the **Arranger Events** list, right-click, and select **Append Selected In Arranger Chain**.
 - Drag an arranger event from the **Arranger Events** list and drop it in the **Current Arranger Chain** list.
 - Drag an arranger event from the **Project** window and drop it in the **Current Arranger Chain** list.
 4. Click **Play**.
-

RESULT

The arranger events are played back in the order that you specified in the arranger chain.

RELATED LINKS

[Arranger Chain Repeat Modes](#) on page 271

Adding a New Arranger Chain

You can create several arranger chains in order to set up alternative versions for playback.

PREREQUISITE

Arranger Mode is activated.

PROCEDURE

1. Open the **Arranger Editor**.
2. Click **Create New Chain**.

RESULT

A new, empty arranger chain is activated. This is reflected by a new name in the **Select Active Chain** pop-up menu and a new, empty **Current Arranger Chain** list.

Editing Arranger Events in the Arranger Chain

In the **Current Arranger Chain** list, you can edit your arranger events.

You can perform the following actions:

- To select multiple events, **Ctrl/Cmd**-click or **Shift**-click them.
- To move events in the list, drag them up or down.
- To copy events, select them, hold **Alt** and drag.
- To repeat events, click in the **Repeats** column and enter the number of repeats.
- To specify how the event is repeated, click in the **Mode** column and select a **Repeat Mode** from the pop-up menu.
- To move the playback position to the start of an event, click the arrow to the left of the event.
- To remove an event from the list, right-click on it, and from the context menu, select **Remove Touched**.
- To remove several events, select them, right-click, and from the context menu select **Remove Selected**.

RELATED LINKS

[Arranger Chain Repeat Modes](#) on page 271

Flattening the Arranger Chain

When you have set up an arranger chain that you like, and you are sure that you do not want to edit it any more, you can convert it to a linear project.

PREREQUISITE

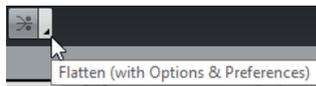
You have saved a copy of the project before flattening the arranger chain.

NOTE

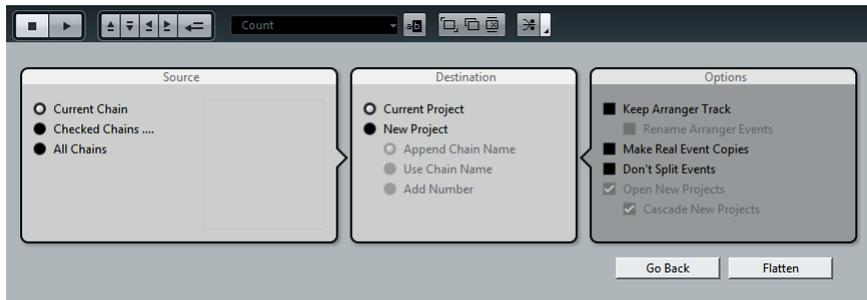
Flattening the arranger chain may remove events and parts from the project. Only use **Flatten** when you know you do not want to edit the arranger track/chain any more. If in doubt, save a copy of the project before flattening the arranger chain.

PROCEDURE

1. Select the arranger chain that you want to convert into a linear project.
2. Optional: Click **Flatten (with Options & Preferences)**



3. Optional: Activate the desired flattening options.



NOTE

If you realize that you want to do further adjustments, click **Go Back**. The activated flatten options are kept.

4. Click **Flatten**.
-

RESULT

The events and parts in the project are reordered, repeated, resized, moved and/or deleted, so that they correspond exactly to the arranger chain.

Jump Mode

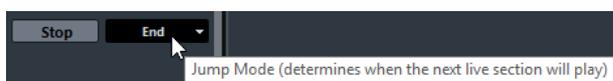
If you have set up an arranger track and play it back, you have live access to the playback order. This way, you can loop your arranger events with more flexibility regarding the length of the playback.

PREREQUISITE

An arranger chain is set up and the arranger mode is activated.

PROCEDURE

1. Click **Play** to play back your project.
2. In the lower part of the **Inspector**, open the **Jump Mode** pop-up menu, and select an option from the pop-up menu.



This determines how long the active arranger event is played, before jumping to the next one.

3. In the **Arranger Events** list of the **Inspector**, click the arrow to the left of the arranger event that you want to trigger.

RESULT

The arranger event is looped according to your settings, until you click another arranger event.

NOTE

You can assign key commands to trigger arranger events in the **Arranger** category of the **Key Commands** dialog.

AFTER COMPLETING THIS TASK

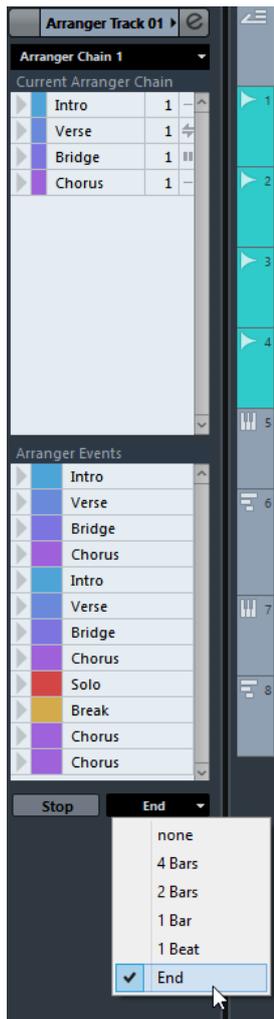
- To stop **Jump Mode**, click **Stop**.
- To continue playback from a specific arranger event, click the arranger event in the **Current Arranger Chain** list.

RELATED LINKS

[Jump Mode Options](#) on page 275

Jump Mode Options

The **Jump Mode** pop-up menu allows you to define how long the active arranger event is played before jumping to the next one.



The following options are available:

None

Jumps to the next section immediately.

4 bars, 2 bars

Jumps to the next arranger event after 2 or 4 bars. If the current arranger event is shorter than 2 or 4 bars, playback jumps to the next arranger event at the event end.

1 bar

Jumps to the next section at the next bar line.

1 beat

Jumps to the next section at the next beat.

End

Plays the current section to the end, then jumps to the next section.

Arranging Music to Video

When you compose music for video, you can use arranger events to fill a specific video section with music. Here comes an example on how you could do that.

PREREQUISITE

You have connected and set up an external sync master device to your computer. You have created a new, empty project, and added a MIDI track.

PROCEDURE

1. Create a MIDI part that starts at position 00:00:00:00 and ends at position 00:01:00:00.
2. Create a MIDI part that starts at position 00:01:00:00 and ends at position 00:02:00:00.
3. Create a MIDI part that starts at position 00:02:00:00 and ends at position 00:03:00:00.
4. On the **Transport** panel, activate **Sync**.
5. Select **Project > Add Track > Arranger**.
6. Add arranger events at the positions of the MIDI parts.
7. Set up the arranger chain A-A-B-B-C-C.
8. Activate **Arranger** mode, and click **Play**.
9. On your external sync master device, start external timecode at position 00:00:10:00. In your project, the position 00:00:10:00 is located, and arranger part A is played back.
10. Start your external sync master device at a position that does not match the Project Start time, for example, 00:01:10:00. In your project, the position 00:01:10:00 is located, and arranger part A is played back.

RESULT

If you position the external sync master device to a position that does not match the project start time, Cubase automatically jumps to the right position in the arranger track.

NOTE

The reference for the external timecode can be MIDI or any other timecode that can be interpreted by Cubase.

Transpose Functions

The transpose functions for audio and MIDI in Cubase allow you to change the pitches of audio and MIDI for playback without changing the actual MIDI notes or the audio.

You can transpose the following:

- An entire project by changing the **Project Root Key** on the **Project** window toolbar.
- Specific sections of your project by creating a transpose track and adding transpose events.
- Individual parts or events by changing their transpose value on the **Project** window info line.

IMPORTANT

As a general rule, always set the root key first when you work with content with a defined root key.

NOTE

To transpose MIDI notes on a selected track, you can also use MIDI modifiers. If you want to change the actual notes, use the MIDI transpose functions in the **Transpose Setup** dialog and in the MIDI effects (see the separate PDF document **Plug-in Reference**).

RELATED LINKS

[Transposing with the Project Root Key](#) on page 278

[Transposing Sections of a Project with Transpose Events](#) on page 281

[Transposing Individual Parts or Events using the Info Line](#) on page 283

[MIDI Modifiers](#) on page 640

[Transpose and Velocity on the Info Line](#) on page 648

[Transpose](#) on page 661

Project Root Key

The **Project Root Key** allows you to transpose your project. Audio or MIDI events in your project use it as a reference.

To change the **Project Root Key**, use the **Project Root Key** pop-up menu on the **Project** window toolbar.



If you change the project root key, loops that already contain root key information will follow automatically.

RELATED LINKS

[Transposing with the Project Root Key](#) on page 278

Transposing with the Project Root Key

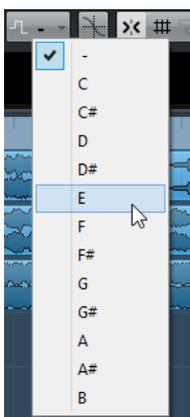
The loops included in Cubase already contain root key information. If you change the project root key, these loops will follow automatically.

PREREQUISITE

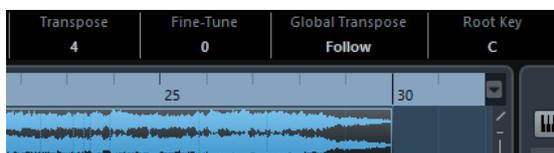
You have opened a project that contains audio loops with different root keys.

PROCEDURE

1. Optional: Select the drum and percussion loops in your project and set the **Global Transpose** setting on the info line to **Independent**.
This setting excludes the loops from being transposed.
2. On the **Project** window toolbar, open the **Project Root Key** pop-up menu and set a root key for the project.



This changes the root key for the entire project and transposes the loops to match this key.



RESULT

The loops follow the project root key.

AFTER COMPLETING THIS TASK

Record audio or MIDI. The newly recorded events get the project root key. Change the project root key. The events with root key information follow.

RELATED LINKS

[Excluding Individual Parts or Events from Global Transpose](#) on page 284

[Transpose Track and Recording](#) on page 283

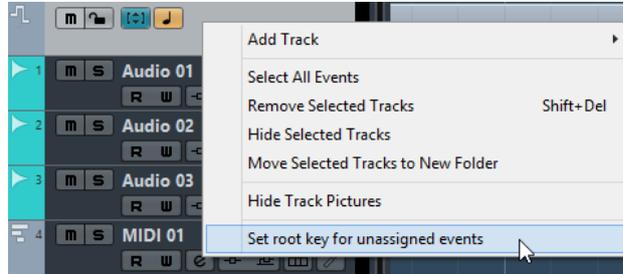
Assigning the Project Root Key to Parts or Events

Some audio or MIDI events that you have created by recording, for example, might not contain root key information. If you want them to follow the transposition changes, you must set them to the **Project Root Key**.

PROCEDURE

1. On the **Project** window toolbar, open the **Project Root Key** pop-up menu and set a root key for the project.

- Optional: Select the drum and percussion loops in your project and set the **Global Transpose** setting on the info line to **Independent**. This setting excludes the loops from being transposed.
- Select **Project > Add Track > Transpose**. A transpose track is created. You can only have one transpose track in a project.
- In the track list, right-click the transpose track, and from the context menu select **Set root key for unassigned events**.



RESULT

All parts or events that do not contain any root key information are set to the project root key.

RELATED LINKS

[Excluding Individual Parts or Events from Global Transpose](#) on page 284

Recording with a Project Root Key

If you record with a project root key, the recorded events follow this root key automatically. This function is useful if you want to change the root key later and you want the events to follow.

PROCEDURE

- Optional: Select the drum and percussion loops in your project and set the **Global Transpose** setting on the info line to **Independent**. This setting excludes the loops from being transposed.
- On the **Project** window toolbar, open the **Project Root Key** pop-up menu and set the root key. All parts and events are transposed in order to match the root key.
- Record your music.

RESULT

All recorded audio events and MIDI parts get the project root key information. On the info line, the **Global Transpose** setting for recorded events is set to **Follow**.

AFTER COMPLETING THIS TASK

Change the project root key. Your events will follow.

Changing the Root Key of Individual Audio Events

You can change or set the root key information for individual audio events or parts in the **Pool**.

PROCEDURE

- Select **Media > Open Pool Window**.
- Open the **View/Attributes** pop-up menu, and activate the **Root Key** option. The **Key** column is displayed in the **Pool** window.

3. Click the **Key** column for the audio event or part that you want to assign a different root key to, and select a key from the pop-up menu.

RESULT

The root key of the audio event or part is changed. The corresponding audio file however, remains unchanged. If you change the project root key, the audio events or parts keep their own root key settings, and are transposed to match the **Project Root Key**.

NOTE

You can also assign root keys in the **MediaBay**.

NOTE

Save the root key in the audio file by selecting the audio event in the event display, and by selecting **Audio > Bounce Selection**.

Changing the Root Key of Individual MIDI Parts

You can change the root key information for individual MIDI parts in the **Project** window info line.

PROCEDURE

1. In the event display, select the MIDI part.
2. In the **Project** window info line, click **Root Key** and select a key from the pop-up menu.

RESULT

The root key of the MIDI part is changed. If you change the project root key, the MIDI parts keep their own root key settings, and are transposed to match the **Project Root Key**.

Transpose Track

The transpose track allows you to transpose the entire project or sections of it. This function is useful if you want to create harmonic variations.

For this function to work, you must add transpose events. These transpose events allow you to transpose specific sections of your project in semitones.

EXAMPLE

If your singer does not reach a certain pitch, you can transpose the entire project by adding a transpose track and creating a transpose event with the value -2 semitones. After recording, set the transpose event back to 0.

EXAMPLE

If you want to brighten up your loops in C major, you can transpose them by adding a transpose track and creating a transpose event with the value 5. This transposes them by 5 semitones, so that the subdominant on F major is played back.

EXAMPLE

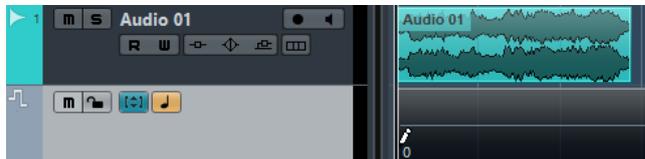
If you want to turn your song more interesting, you can transpose the last chorus of your project by adding a transpose track and creating a transpose event with the value 1.

Transposing Sections of a Project with Transpose Events

You can transpose specific sections of your project by creating transpose events on the transpose track.

PROCEDURE

1. Select **Project > Add Track > Transpose**.
A transpose track is created. You can only have one transpose track in a project.
2. Select the **Draw** tool and click on the transpose track.
A transpose event is created from the point where you clicked until the end of the project.



3. Click at a new position to add another transpose event.



4. Click the value in the lower left corner of the event, and enter a transpose value between -24 and 24 semitones.
 5. Play back your project.
-

RESULT

The sections of your project that are situated at the same time positions as the transpose events are transposed.

RELATED LINKS

[Excluding Individual Parts or Events from Global Transpose](#) on page 284

Muting the Transpose Track

You can mute the transpose track. This is useful if you want to compare the effect of the transposition with the original sound, for example.

PROCEDURE

- In the track list of the transpose track, click **Mute Transpose Events**.
-

RESULT

The transpose events are not taken into account during playback.

Transpose Lock

The lock function on the transpose track allows you to prevent your transpose events from being moved or changed by mistake.

To lock the transpose track, activate **Lock** in the track list.



Keep Transpose in Octave Range

Keep Transpose in Octave Range on the transpose track keeps the transposition in the octave range.

This ensures that nothing is transposed by more than seven semitones, and that your music never sounds unnatural because the pitch was raised too high or too low. We also recommend activating this function, when you work with audio loops.

EXAMPLE

You have opened the **Key Editor** and activated **Indicate Transpositions** .

You have added a transpose track and activated **Transpose in Octave Range** .

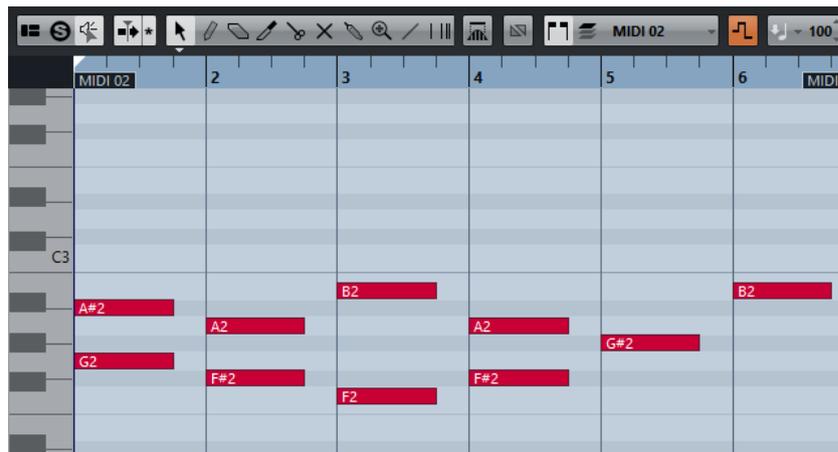
If you add a transpose event with a value of 8 semitones or higher, the chord is transposed to the nearest interval or pitch.

Indicate Transpositions

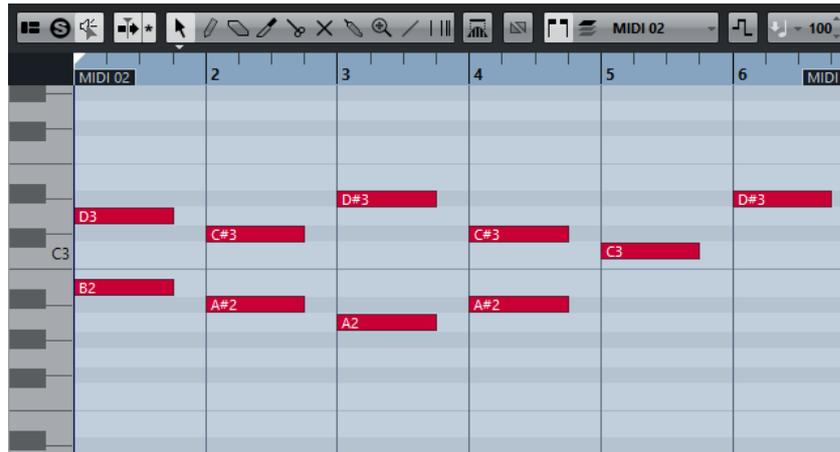
For MIDI parts, you can get a visual feedback that allows you to compare the original sounds and the music transposed for playback.

To activate this, open the part in the **Key Editor**, and activate **Indicate Transpositions**.

- If **Indicate Transpositions** is activated, the transposed note pitches are shown.



- If **Indicate Transpositions** is deactivated, the original pitches of the notes in the MIDI part are shown.



Transpose Track and Recording

The transpose track affects the result of the recorded parts or events.

If your project contains a transpose track with transpose events, and you record audio or MIDI, the following happens:

- **Global Transpose** is automatically set to **Independent** for the recorded parts or events.
- The project root key is not taken into account.

If your project does not contain a transpose track or if no transpose events are added, the following happens:

- **Global Transpose** is automatically set to **Follow** for the recorded parts or events.
- The recorded parts or events get the project root key.

Transpose on the Info Line

In the **Project** window info line, you can change the transpose value for individual parts or events.

To do this, change the transpose value in the **Transpose** field on the info line.



The Transpose field also indicates transpositions introduced by changing the **Project Root Key**.

Transposing Individual Parts or Events using the Info Line

You can transpose individual audio events and MIDI parts on the info line **Transpose** field.

PROCEDURE

1. Select the event or part that you want to transpose.
2. On the **Project** window info line, click the **Transpose** field and enter a transpose value in semitones.

NOTE

If the project already contains global transpose changes, it might be useful to activate **Keep Transpose in Octave Range**.

RESULT

The event is transposed accordingly. The transpose value is added to any global transpose change that you have created by using the root key or the transpose track.

RELATED LINKS

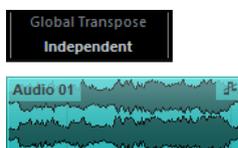
[Keep Transpose in Octave Range](#) on page 282

Excluding Individual Parts or Events from Global Transpose

If you add global transposition, for example, by changing the root key or by creating transpose events, you can exclude specific events from being transposed. This is useful for drum and percussion loops or special effects (FX) loops.

PROCEDURE

1. Select the event or part that you want to exclude from being transposed.
2. On the info line, click the **Global Transpose** field to set the value to **Independent**.
Events that are excluded from **Global Transpose** show a symbol in the upper right corner.



RESULT

If you change the project root key or add transpose events, the **Independent** parts or events are not affected.

NOTE

Ready-made parts or events that are tagged as drums or FX, are automatically set to **Independent**.

Markers

Markers are used to locate certain positions quickly. There are two types of markers: position markers and cycle markers.

If you often find yourself jumping to a specific position within a project, you should insert a marker at this position. You can also use markers to make range selections or for zooming.

Markers are located on the marker track. You can add 1 marker track in Cubase Artist and up to 10 marker tracks in Cubase Pro.

Position Markers

Position markers allow you to save a specific position.

Position markers on the marker track are shown as marker events: vertical lines with the marker description (if assigned) and number beside it. If you select a marker track, all its markers are shown in the Inspector.

Cycle Markers

By creating cycle markers you can save any number of left and right locator positions as start and end positions of a range and recall them by double-clicking on the corresponding marker.

Cycle markers are shown on a marker track as two markers bridged by a horizontal line. Cycle markers are ideal for storing sections of a project.

By defining cycle markers for sections of a song, e. g. intro, verse, and chorus, you can quickly navigate to the song sections and repeat the section by activating **Cycle** on the **Transport** panel.

Setting the Locators Using Cycle Markers

Cycle markers represent ranges in your project. You can use them for moving the left and right locators.

PROCEDURE

- To set the left locator to the cycle marker start and the right locator to the cycle marker end, perform one of the following actions:
 - Double-click on a cycle marker.
 - From the **Cycle** pop-up menu in the track list, select a cycle marker.

RESULT

The left and right locators are moved to encompass the cycle marker.

AFTER COMPLETING THIS TASK

Now you can move the project cursor position to the start or the end of the cycle marker by moving it to the corresponding locator or use cycle markers to export specific ranges of your project with the **Export Audio Mixdown** dialog.

Editing Cycle Markers

When editing cycle markers on a marker track, snap is taken into account.

- To add a cycle marker, press **Ctrl/Cmd** click and drag on the marker track.
- To change the start/end position of a cycle marker, drag the start/end handle.
- To move a cycle marker to another position, drag the upper border.
- To delete a cycle marker, click with the **Erase** tool.

If you hold down **Alt** when you click, all consecutive markers are deleted.

- To cut a range in a cycle marker, select a range in the cycle marker and press **Ctrl/Cmd-X**.
- To set the marker start/end of the selected cycle marker to the cursor position, select **Project > Markers** to open the **Markers** window, and select **Functions > Set marker start/end to cursor**.
- To set the left and right locators, double-click a cycle marker.
- To zoom in on a cycle marker, press **Alt** and double-click the cycle marker.

Markers Window

In the **Markers** window you can view and edit markers. Cubase Pro only: The markers on the active marker track are displayed in the marker list in the order in which they occur in the project. Cubase Artist only: The markers on the marker track are displayed in the marker list in the order in which they occur in the project.

To open the **Markers** window, you have the following possibilities:

- Select **Project > Markers**.
- On the **Transport** panel in the marker section, click **Show**.
- Use a key command (by default **Ctrl/Cmd-M**).



1. **Locate arrow**
Indicates which marker is at the project cursor position.
2. **Set focus to marker track**
Cubase Pro only: Allows you to select the marker track that has the focus.
3. **Functions menu**

Lists all functions available in the **Marker** window.

4. **Marker type**

Allows you to specify which marker type is shown in the marker list.

5. **Auto-Scroll with Project Cursor**

Allows you to keep track of the locate arrow, even if your project contains a large number of markers. If this option is activated, the **Marker** window is automatically scrolled to keep the locate arrow visible.

6. **Markers list**

Shows the markers in the order in which they occur in the project.

7. **Marker Settings**

Shows the marker settings.

Editing in the Markers Window

In the **Markers** window you can select, edit, add, move, and remove markers.

- To select a marker, click on it.
- To edit a selected marker, click on it.
Select multiple markers by **Shift** or **Ctrl/Cmd**-clicking them.
- To add a position marker at the cursor position, select **Functions > Insert Marker**.
Cubase Pro only: A position marker is added at the current project cursor position on the active marker track. Cubase Artist only: A position marker is added at the current project cursor position on the marker track.
- To add a cycle marker at the cursor position, select **Functions > Insert Cycle Marker**.
Cubase Pro only: This adds a cycle marker between the left and right locators on the active marker track. Cubase Artist only: This adds a cycle marker between the left and right locators on the marker track.
- To move a marker to the cursor position, select the marker and select **Functions > Move Markers to Cursor**.
You can also enter the new position numerically in the **Position** column. If a cycle marker is selected, the move operation affects the cycle marker start position.
- Cubase Pro only: To move markers to another track, select the markers, select **Functions > Move Markers to Track**, and select the marker track.
- To remove a marker, select it and select **Functions > Remove Marker**.

Navigating in the Marker List

You can navigate in the marker list using your computer keyboard and select entries by pressing **Enter**. This is a quick and easy way to jump to markers during playback or recording.

- To move to the previous/next marker in the list, press the **Up Arrow/Down Arrow** keys.
- To jump to the first/last marker, press the **Page Up/Page Down** keys.

Sorting and Reordering the Marker List

You can customize the display of the marker attributes in the marker list by sorting or reordering the columns.

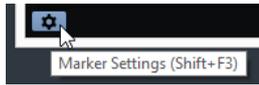
- To sort the marker list by a specific attribute, click on the corresponding column header.
- To reorder the marker attributes, drag and drop the corresponding column headers.
- To adjust the width of a column, place the mouse pointer between two column headers and drag left or right.

NOTE

No matter by which attribute you sort, the second sort criterion will always be the position attribute.

Marker Settings

You can access the marker settings by clicking the corresponding button in the bottom left corner of the **Markers** window.



Cycle follows when locating to Markers

This sets the left and right locators automatically to a position or cycle marker, when locating to this marker. This is useful if you need to set the locators on the fly, e. g. during recording for Punch In/Punch Out.

Show marker IDs on marker track

If this option is activated, the marker IDs are shown on the marker track.

Sync Selection

If this option is activated, the **Markers** window selection is linked to the selection in the **Project** window.

Marker Attributes

The following marker attributes are shown in the marker list of the **Marker** window:

Locate

An arrow indicates which marker is at the project cursor position (or closest to the project cursor). If you click in this column, the project cursor is moved to the corresponding marker position. This column cannot be hidden.

ID

This column shows the marker ID numbers.

Position

In this column you can view and edit the markers' time positions (or start positions for cycle markers). This column cannot be hidden.

End

In this column you can view and edit the end positions of cycle markers.

Length

In this column you can view and edit the length of cycle markers.

Description

Here you can enter names or descriptions for markers.

RELATED LINKS

[Marker IDs](#) on page 289

[Cycle Markers](#) on page 285

Editing Attributes

- To edit a marker attribute, select the corresponding marker, click in the desired attribute column, and make your settings.
- To change the attributes of several markers, select the markers and click the checkbox for the desired attribute.
All selected markers will change their attributes accordingly. Note that this does not work when clicking on a timecode value or a text field.

NOTE

To navigate in the list of marker attributes, you can also use the **Tab** key and the **Up Arrow**, **Down Arrow**, **Left Arrow**, **Right Arrow** keys.

Sorting and Reordering Columns

You can customize the display of the marker attributes in the marker list by sorting or reordering the columns.

- To sort the marker list by a specific attribute, click on the corresponding column header.

NOTE

No matter by which attribute you sort, the second sort criterion will always be the position attribute.

- To reorder the marker attributes, drag and drop the corresponding column headers.
- To adjust the width of a column, place the mouse pointer between two column headers and drag left or right.

Marker IDs

Each time you add a marker, it is automatically and sequentially assigned an ID number, starting from 1.

IDs for cycle markers are shown in brackets and start from 1. ID numbers can be changed at any time – this allows you to assign specific markers to key commands.

NOTE

Cubase Pro only: If you move a marker from one marker track to another by drag & drop in the **Project** window and the marker ID is already used on this track, the inserted marker automatically gets a new ID.

Reassigning Marker IDs

Sometimes, especially when setting markers on the fly, you may forget or miss to set a marker. When added later, this marker's ID will not correspond to its position on the marker track. Therefore, it is possible to reassign the IDs for all markers on a track.

PROCEDURE

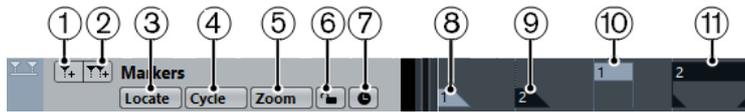
1. Open the **Markers** window.
 2. Cubase Pro only: Select the marker track whose ID numbers you want to reassign.
 3. Open the **Functions** pop-up menu and select either **Reassign Position Marker IDs** or **Reassign Cycle Marker IDs**.
-

RESULT

The marker IDs of the selected type are reassigned to match the order of markers on the marker track.

Marker Track

A marker track is used for adding and editing markers.



- 1. Add Marker**
Adds a position marker at the cursor position.
- 2. Add Cycle Marker**
Adds a cycle marker at the cursor position.
- 3. Locate pop-up menu**
If you select a position or a cycle marker in this pop-up menu, the corresponding marker in the event display or in the **Markers** window is selected.
- 4. Cycle pop-up menu**
If you select a cycle marker in this pop-up menu, the left and right locators are set to the corresponding cycle marker.
- 5. Zoom pop-up menu**
If you select a cycle marker in this pop-up menu, the view zooms to the corresponding cycle marker.
- 6. Lock**
Locks the marker track. When a marker track is locked, you cannot edit the track and its markers.
- 7. Toggle Time Base**
Sets the track time base.
- 8. Marker event (inactive)**
Shows an inactive marker event.
- 9. Marker event (active)**
Shows an active marker event.
- 10. Cycle marker event (inactive)**
Shows an inactive cycle marker event.
- 11. Cycle marker event (active)**
Shows an active cycle marker event.

Adding, Moving, and Removing the Marker Track

- To add a marker track to the project, select **Project > Add Track > Marker**.
- To move a marker track to another position in the track list, click and drag it up or down.
- Cubase Pro only: To remove one or more marker tracks, right-click them in the track list and select **Remove Selected Tracks**.
- Cubase Artist only: To remove the marker track, right-click it in the track list and select **Remove Selected Tracks**.
- To remove an empty marker track, select **Project > Remove Empty Tracks**. This also removes any other tracks that are empty.

NOTE

Cubase Pro only: When you remove all marker tracks, the marker track that you removed last (including all its markers) is moved to the clipboard. If you later insert a new marker track, this track is pasted from the clipboard into the track list.

Cubase Pro only: Multiple Marker Tracks

You can create up to 10 marker tracks.

Naming marker tracks

By default, the first marker track you create is called "Marker", the second "Marker 02", and so on.

You can name marker tracks by double-clicking on the marker track name in the track list or the Inspector and entering a new name.

The active marker track

When you are working with multiple marker tracks, only one track is active. All editing functions affect the markers on the active track only. You activate a track by clicking **Activate this track** in the track list.

The following rules apply:

- When you add a new marker track, this track is automatically active.
- When you remove an active track, the topmost marker track in the track list is activated. When using cycle markers for zooming, only the cycle markers of the active track are displayed on the **Zoom** pop-up menu.
- When exporting an audio mixdown of the audio between the cycle markers, only the cycle markers of the active track are displayed in the **Export Audio Mixdown** dialog.
- Most marker key commands affect the active track.

Locking marker tracks

You can lock one or more marker tracks by clicking the corresponding lock button of the track. When a marker track is locked, you cannot edit the track and its markers. However, you can still rename the track or change its status (active/inactive). In the **Markers** window and the Project Browser, the unavailable features of a locked track are grayed out.

RELATED LINKS

[Editing Cycle Markers](#) on page 286

[Importing and Exporting Markers](#) on page 293

Working with Multiple Marker Tracks

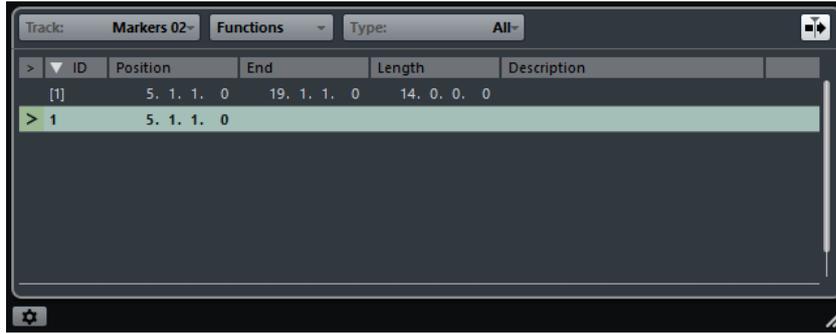
PREREQUISITE

You have added at least two marker tracks to the project and named them.

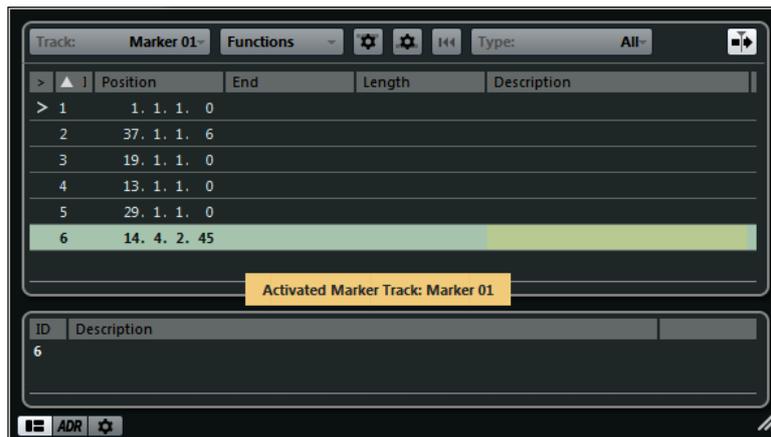
PROCEDURE

1. Select **File > Key Commands**.
2. In the **Marker** category, set up a key command for **Insert and name Marker**. This command adds a position marker, opens the **Markers** window and activates the **Description** column.
3. Set up key commands for **Activate next Marker Track** and **Activate previous Marker Track**.

4. Activate the marker track for the first narrator, and play back the video file.



5. At the position where the first dialogue section should be replaced, trigger **Insert and name Marker**.
The **Marker** window opens with the **Description** column is active, so that you can insert a name for the new marker.
6. Enter a name or description for the section, and press **Return** to confirm.
A new marker is created on the active track in the **Project** window.
7. Activate the track on which you want to insert the next marker using the **Activate next/previous Marker Track** key command.
A message informs you that a different marker track is now active.



8. Trigger the **Insert and name Marker** key command at the position where the next dialogue section should be replaced.
Repeat this procedure for all markers that you want to insert.

Editing Markers on the Marker Track

- To add a position marker, click **Add Marker** or use the **Draw** tool.
- To add a cycle marker, click **Add Cycle Marker** or use the **Draw** tool.
- To select a marker, use the standard techniques.
- To resize a cycle marker, select it and drag the handles. You can also do this numerically on the info line.
- To move a marker, select it and drag it. You can also edit marker positions on the info line.
Cubase Pro only: If you move markers from one track to another, the marker gets the numbering of the first free marker ID on the track where it is dropped.
- To remove a marker, select it and press **Delete** or use the **Erase** tool.

Using Markers to Select Ranges

Markers can be used in conjunction with the **Range Selection** tool to make range selections in the **Project** window. This is useful if you quickly want to make a selection that spans all tracks in the project.

PROCEDURE

1. Set markers at the start and end of the section that you want to move or copy.
 2. Select the **Range Selection** tool and double-click on the marker track between the markers.
Everything in the project within the marker boundaries is selected. Any functions or processing you perform now affect the selection only.
 3. Click on the marker track in the selected range and drag the range to a new position.
If you hold down **Alt** while you drag the range, the selection in the **Project** window is copied instead.
-

Importing and Exporting Markers

Markers and marker tracks can be imported and exported.

The following files can contain markers:

- MIDI files
- Track archives (Cubase Pro only)

Importing Markers via MIDI

You can import position markers by importing MIDI files containing markers. This is useful if you want to use your marker tracks in other projects or if you want to share them with other Cubase users. Any markers you have added are included in the MIDI file as standard MIDI file marker events.

- Select **File > Preferences > MIDI > MIDI File** and make sure **Import Markers** is activated.

The following settings are imported:

- The start position of position markers and cycle markers
- Cubase Pro only: The track assignment of markers
- Cubase Pro only: All marker tracks

NOTE

Cubase Pro only: If you import a standard MIDI file created in other applications, all markers are merged on one marker track.

RELATED LINKS

[Importing MIDI files](#) on page 967

Exporting Markers via MIDI

You can export your markers as part of a MIDI file.

- To include any markers in the MIDI file, activate **Export Markers** in the **Export Options** dialog.

The following settings are exported:

- The start position of position markers and cycle markers.
- Cubase Pro only: The track assignment of markers.
- Cubase Pro only: All marker tracks

NOTE

Cubase Pro only: To be able to export markers via MIDI export, your project must contain at least one marker track.

Cubase Artist only: To be able to export markers via MIDI export, your project must contain a marker track.

RELATED LINKS

[Exporting MIDI files](#) on page 964

Importing Markers as Part of a Track Archive (Cubase Pro only)

You can import position markers and cycle markers by importing track archives containing marker tracks. Select the tracks that you want to import in the **Import Options** dialog.

The following settings are imported:

- The start and end positions of cycle markers
- The track assignment of markers
- The marker IDs
- All marker tracks

RELATED LINKS

[Importing Tracks from a Track Archive](#) on page 968

Exporting Markers as Part of a Track Archive (Cubase Pro only)

If you want to use your marker tracks in other projects, for example to share them with other users, you can export them as part of a track archive. To do so, select the marker tracks that you want to export. Then select **File > Export > Selected Tracks**.

The following settings are exported:

- The start and end positions of cycle markers
- The track assignment of markers
- The marker IDs
- All marker tracks

RELATED LINKS

[Exporting tracks as track archives](#) on page 968

MixConsole

The **MixConsole** provides a common environment for producing mixes in stereo or surround. It allows you to control level, pan, solo/mute status, etc. for audio and MIDI channels. Furthermore, you can set up the input and output routing for multiple tracks or channels at the same time. You can undo/redo **MixConsole** parameter changes for an open project at any time.

You can open the **MixConsole** in a separate window or in the lower zone of the **Project** window.

While the lower zone **MixConsole** features the key functions for mixing, the separate **MixConsole** window gives you access to additional functions and settings.

RELATED LINKS

[MixConsole in Lower Zone](#) on page 295

[MixConsole Window](#) on page 298

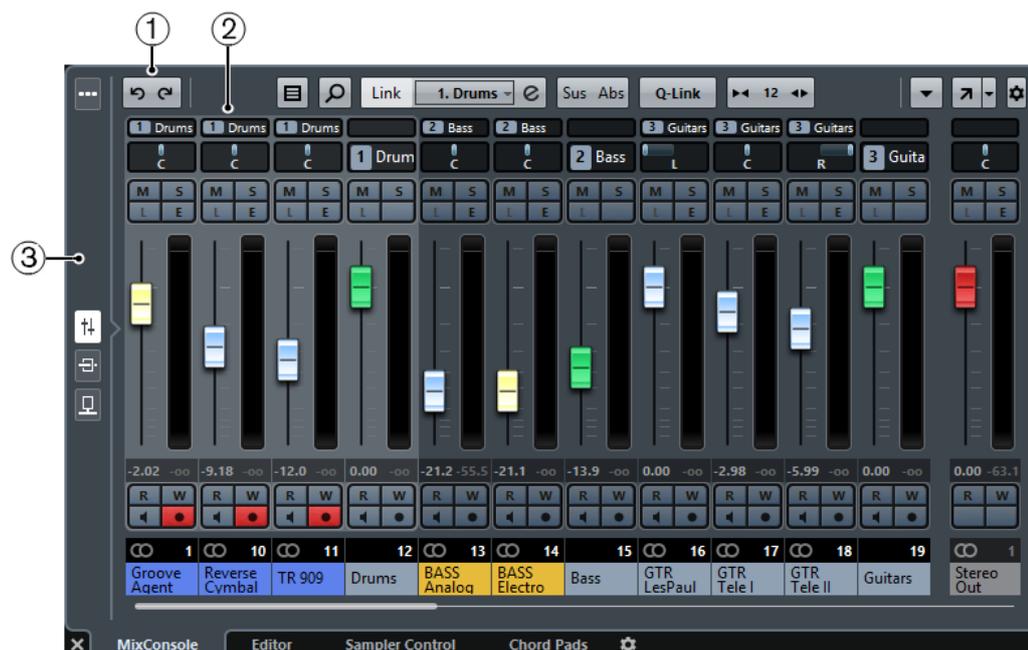
MixConsole in Lower Zone

You can show a **MixConsole** in the lower zone of the **Project** window. This is useful, if you want to access the most important **MixConsole** functions from within a fixed zone of the **Project** window. The lower zone **MixConsole** is a separate **MixConsole** that does not follow any visibility changes you perform in the **MixConsole** window.

Do one of the following to open a **MixConsole** in the lower zone of the **Project** window:

- Press **Alt+F3**.
- Select **Devices > MixConsole in Lower Zone**.

The **MixConsole** in the lower zone is divided into the following sections:



1. Toolbar

The toolbar shows tools and shortcuts for settings and functions in the **MixConsole**.

2. Fader Section

The fader section is always visible and shows all channels in the same order as in the track list.

3. Page Selector

Allows you to select what page is displayed in the fader section: the channel faders, the insert effects for a channel, or the send effects. The top button allows you to show/hide the toolbar.

RELATED LINKS

[Fader Section](#) on page 315

[Inserts](#) on page 327

[Sends](#) on page 339

[Filtering Channel Types](#) on page 305

[Undoing/Redoing MixConsole Parameter Changes](#) on page 305

[Linking Channels](#) on page 310

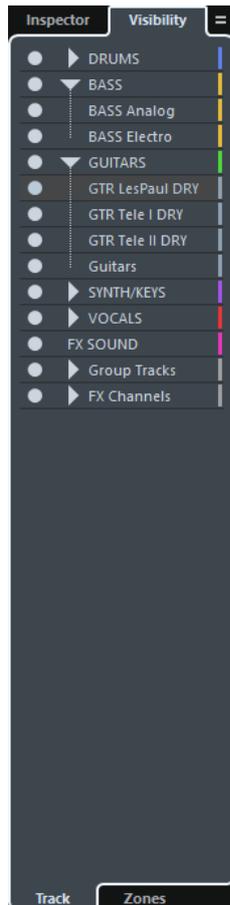
[Functions Menu](#) on page 313

Showing/Hiding Channels in the Lower Zone MixConsole

To determine what channels are visible in the lower zone **MixConsole**, you must use the **Track Visibility** in the left zone of the **Project** window.

PROCEDURE

1. Click **Show/Hide Left Zone** on the **Project** window toolbar to activate the **Left Zone**.
2. At the top of the left zone, click the **Visibility** tab.
3. At the bottom of the left zone, click the **Track** tab.



4. Activate/Deactivate a dot to the left of a track name.
-

RESULT

The track in the track list and the corresponding channel in the lower zone **MixConsole** are shown/hidden.

RELATED LINKS

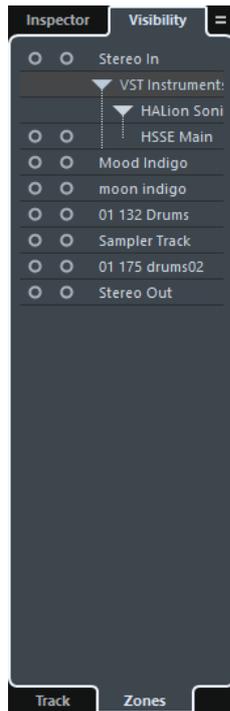
- [Opening the Track Visibility](#) on page 62
- [Showing/Hiding Individual Tracks](#) on page 63
- [Visibility](#) on page 62

Determining the Channel Order in the Lower Zone MixConsole

You can determine and lock the position of channels in the lower zone **MixConsole**.

PROCEDURE

1. At the top of the left zone, click the **Visibility** tab.
2. At the bottom of the left zone, click the **Zones** tab.



3. Do one of the following:
- To lock a channel on the left of the fader section, activate the left dot next to the channel name.
 - To lock a channel on the right of the fader section, activate the right dot next to the channel name.

RESULT

The channel is locked. Locked channels are always displayed.

RELATED LINKS

[Opening the Zones Visibility](#) on page 64

MixConsole Window

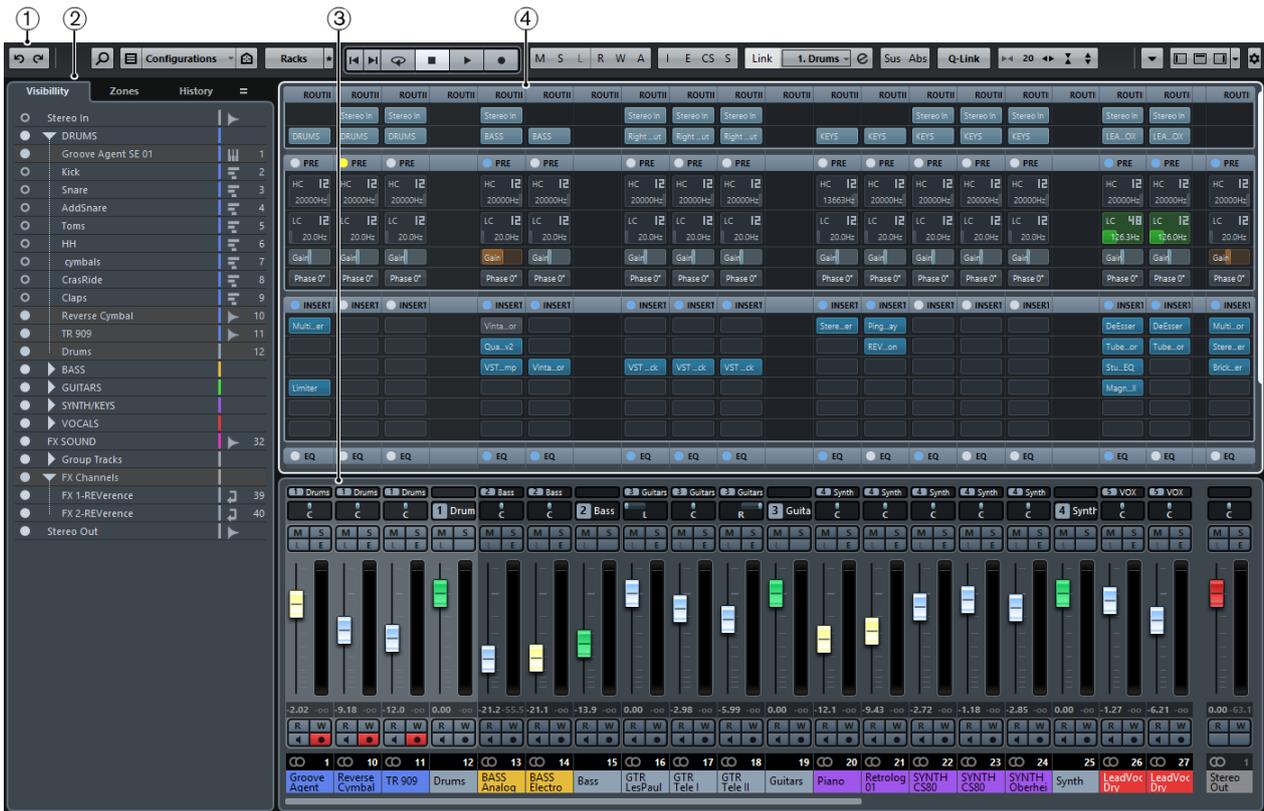
You can open the **MixConsole** in a separate window.

Do one of the following to open the **MixConsole**:

- Press **F3**.
- Select **Devices > MixConsole**.
- On the **Project** window toolbar, click **Open MixConsole** .

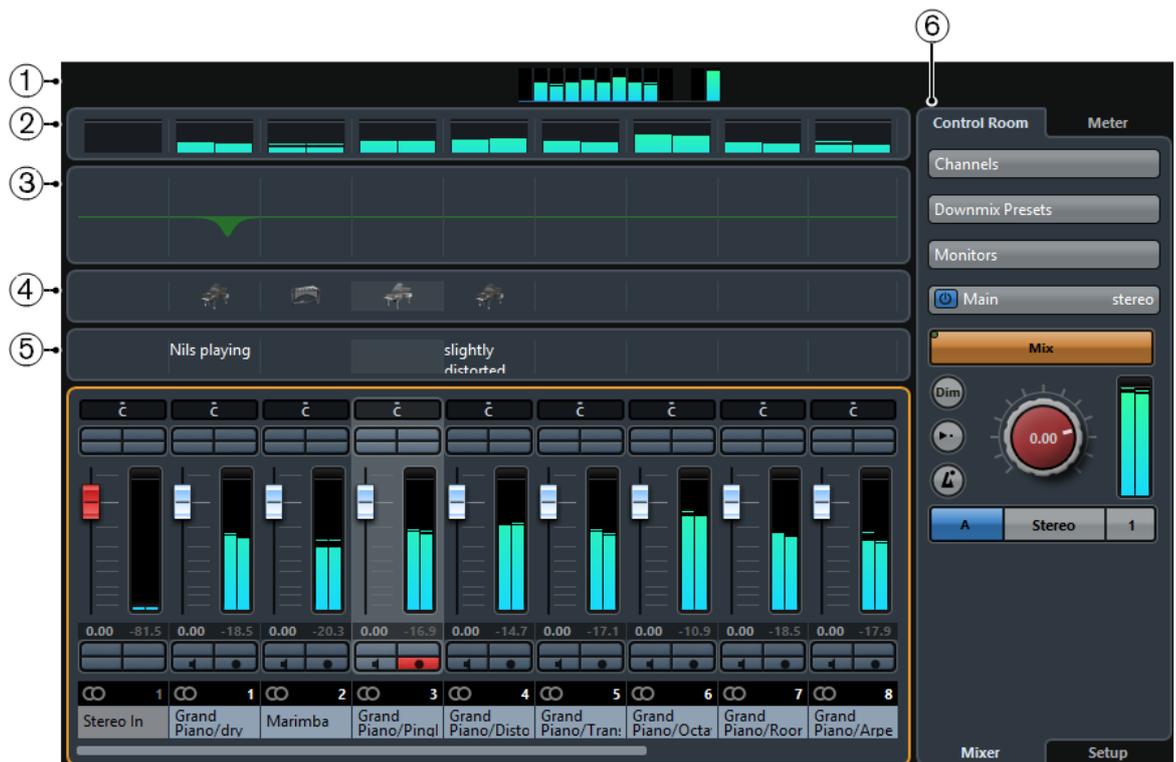
NOTE

This is only visible on the toolbar if the section **Media & MixConsole Windows** is activated.



The main **MixConsole** sections are:

1. **Toolbar**
The toolbar shows tools and shortcuts for settings and functions in the **MixConsole**.
2. **Channel Selector (Left Zone)**
Allows you to set up the visibility and positions of channels in the fader section.
3. **Channel Racks (Upper Zone)**
Allows you to show additional channel controls as needed.
4. **Fader Section**
The fader section is always visible and shows all channels in the same order as in the track list.



Apart from the main sections, you can also access the following sections from within the **MixConsole** window:

- 1. Channel Overview**
Displays all channels as boxes. If you have more channels than can be displayed in the window, you can use the channel overview to navigate to other channels and select them.
- 2. Meter Bridge**
Allows you to monitor the levels of your channels.
To select a meter type, open the meter bridge context menu and select either **PPM** or **Wave**.
- 3. Equalizer Curve**
Allows you to draw an EQ curve. Click in the curve display to open a larger view where you can edit the curve points.
- 4. Pictures**
Opens the **Pictures** section that allows you to add a picture to the selected channel. Pictures can help you identify your **MixConsole** channels quickly.
- 5. Notepad**
In the **Notepad** section, you can enter notes and comments about a channel. Each channel has its own notepad.
- 6. Control Room/Meter (Right Zone) (Cubase Pro only)**
Opens the **Control Room/Meter** section.

RELATED LINKS

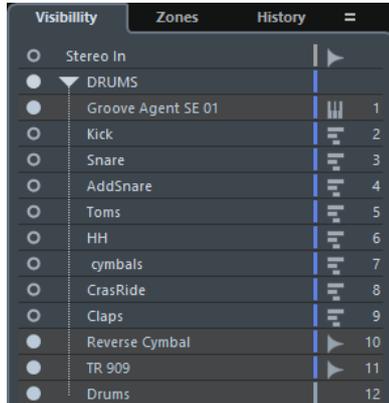
- [Channel Selector](#) on page 301
- [MixConsole Toolbar](#) on page 302
- [Fader Section](#) on page 315
- [Channel Racks](#) on page 308
- [Track Pictures Browser](#) on page 160
- [Adding Notes to a MixConsole Channel](#) on page 343
- [Control Room \(Cubase Pro only\)](#) on page 352

Channel Selector

The channel selector contains the following tabs: **Visibility** and **Zones** that list all channels contained in your project, and **History** that lists all **MixConsole** parameter changes.

Visibility Tab

The **Visibility** tab allows you to determine which channels are shown in the **MixConsole**. This is particularly helpful if you organize your tracks in folder or group tracks.



- To show/hide channels, activate/deactivate the dots.
- To collapse/expand groups and folders, click the group or folder name.

NOTE

The lower zone **MixConsole** does not follow any visibility changes you perform in the **MixConsole** window and vice versa.

Zones Tab

The **Zones** tab allows you to determine and lock the position of certain channels.



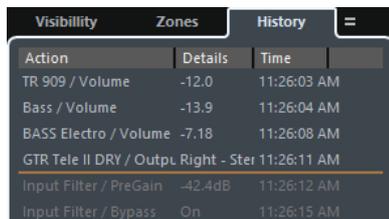
- To lock channels on the left/right of the fader section, activate the left/right dots next to the channel names.
Locked channels are excluded from scrolling and are always visible.

NOTE

The lower zone **MixConsole** does not follow any visibility changes you perform in the **MixConsole** window and vice versa.

History Tab

The **History** tab allows you to view and undo/redo **MixConsole** parameter changes. All **MixConsole** parameter changes are shown in a list.



Action	Details	Time
TR 909 / Volume	-12.0	11:26:03 AM
Bass / Volume	-13.9	11:26:04 AM
BASS Electro / Volume	-7.18	11:26:08 AM
GTR Tele II DRY / Outpu. Right - Ster		11:26:11 AM
Input Filter / PreGain	-42.4dB	11:26:12 AM
Input Filter / Bypass	On	11:26:15 AM

- To undo **MixConsole** parameter actions, click **Undo** . You can also click the orange line in the history list and drag it up.
- To redo **MixConsole** parameter actions, click **Redo** . You can also click the orange line in the history list and drag it down.

RELATED LINKS

[Undoing/Redoing MixConsole Parameter Changes](#) on page 305

Synchronizing Channel and Track Visibility

You can synchronize the channel visibility in the **MixConsole** with the track visibility in the **Project** window.

PROCEDURE

1. In the **Channel Selector**, open the **Visibility** tab.
2. Click **Sync Visibility of Project and MixConsole: On/Off** .
3. Select **Sync MixConsole and Project** to synchronize the channel visibility with the track visibility.

RESULT

The track and channel visibility are synchronized.

NOTE

Channels that are locked in the **Zones** tab are not synchronized.

RELATED LINKS

[Synchronizing Track and Channel Visibility](#) on page 64

MixConsole Toolbar

The toolbar contains tools and shortcuts for settings and functions in the **MixConsole**.

NOTE

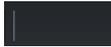
The toolbar of the lower zone **MixConsole** contains a limited set of tools. This includes: **MixConsole History**, **Channel Filter Types**, **Search**, **Link Group**, **Zoom Palette**, **Mixer Functions Menu**, and **Window Zone Controls**. You can show/hide the toolbar by clicking **Show/Hide MixConsole Toolbar** in the lower zone.

MixConsole History



These buttons allow you to undo/redo **MixConsole** parameter changes.

Left Divider



Allows you to use the left divider. Tools that are placed to the left of the divider are always shown.

Search



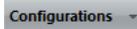
Opens a selector that lists all tracks/channels.

Channel Filter Types



Opens the channel filter that allows you to show/hide all channels of a certain channel type.

Channel Visibility Configurations



Allows you to create configurations that are useful for switching quickly between different visibility setups.

Channel Visibility Agents



Allows you to select channels with specific properties.

Select Racks



Opens the rack selector that allows you to show/hide specific racks.

Rack Settings



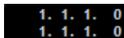
Opens a pop-up menu with settings for the racks.

Go to Left/Right Locator Position



Allows you to go to the left/right locator positions.

Left/Right Locator Position



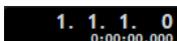
Shows the left/right locator positions.

Transport Buttons



Shows the transport controls.

Time Display



Shows the position of the project cursor in the selected time format.

Markers



Allows you to set and locate marker positions.

State Buttons



Allows you to set mute, solo, listen, and automation states. Here you can also bypass inserts, EQs, channel strips, and sends.

Link Group



Allows you to link channels.

Zoom Palette



Allows you to increase/reduce the channel width and the rack height. You can change the width for all channels from viewable (narrow) to editable (wide), by using the default key commands **G** and **H**.

Performance Meter



Shows the meters for ASIO time usage and hard disk transfer load.

Right Divider



Allows you to use the right divider. Tools that are placed to the right of the divider are always shown.

Mixer Functions Menu



Opens the **Functions Menu** that allows you to make settings in the **MixConsole**.

Window Zone Controls



Allows you to show or hide the left zone, the upper zone and the right zone of the **MixConsole**. The **Setup Window Layout** pop-up menu allows you to show or hide the status line, the info line, and the overview line.

Finding Channels

The **Find Track/Channel** function allows you to find specific channels. This is useful if you have a large project with many channels or if you have hidden channels using the visibility features.

PROCEDURE

1. Click **Find Track/Channel** on the **MixConsole** toolbar to open a selector that lists all channels.
 2. In the search field, enter the name of the channel.
As you type, the selector filters automatically.
 3. In the selector, select the channel and press **Return**.
-

RESULT

The channel is selected in the channel list.

NOTE

If the channel was outside the view or hidden, it is now shown. Channels that are hidden using **Filter Channel Types** are not shown.

Undoing/Redoing MixConsole Parameter Changes

You can undo/redo **MixConsole** parameter changes and experiment with different **MixConsole** settings.

NOTE

MixConsole parameters that change due to read automation actions are not part of the **MixConsole** history.

To undo/redo a **MixConsole** parameter, do one of the following:

- On the toolbar of the **MixConsole** or of the **MixConsole** in lower zone, click **Undo**  or **Redo** .
- Press **Alt-Z** to undo **MixConsole** parameter changes or press **Alt-Shift-Z** to redo parameter changes.

The following **MixConsole** parameter changes can be undone/redone:

- Volume changes
- Panorama changes
- Changes on the **Routing** rack
- Filter, gain, and phase changes in the **Pre** rack
- Plug-in changes in the **Inserts** rack
- EQ changes
- Changes on the **Channel Strip** rack
- Changes on the **Sends** rack
- Cubase Pro only: Changes on the **Cue Sends** rack
- Cubase Pro only: Changes on the **Direct Routing** rack

IMPORTANT

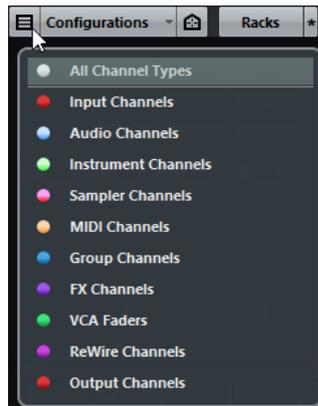
The **MixConsole** history is not saved with the project.

Filtering Channel Types

The channel types filter on the **MixConsole** toolbar allows you to determine which channel types are shown.

PROCEDURE

1. Click **Filter Channel Types**.
This opens the channel types filter.



2. Click a dot to the left of a channel type to hide it.
-

RESULT

Channels of the filtered type are removed from the fader section and the color of the **Filter Channel Types** button changes to indicate that a channel type is hidden.

Channel Visibility Configurations

The **Channel Visibility Configurations** button on the **MixConsole** toolbar allows you to create configurations that are useful for switching quickly between different visibility setups.

The button displays the name of the active configuration. A list of configurations is shown as soon as you create at least one configuration. To load a configuration, select it from this list. Channel visibility configurations are saved with the project.

Add Configuration

Opens the **Add Configuration** dialog that allows you to save the configuration and enter a name for it.

Update Configuration

If you change the active configuration, this is indicated by an asterisk after the configuration name. Use this function to save changes to the active configuration.

Rename Configuration

Opens the **Rename Configuration** dialog that allows you to rename the active configuration.

Delete Configuration

Allows you to delete the active configuration.

Move Configuration to Position

This function becomes available if 2 or more configurations exist. It allows you to change the position of the active configuration on the menu. This is useful as you can assign key commands to the first 8 configurations in the **Channel & Track Visibility** category of the **Key Commands** dialog.

Saving Configurations

To quickly switch between different channel setups, you can save configurations. The configurations contain visibility and zone settings as well as the show/hide status of channel types and racks.

PROCEDURE

1. Set up the configuration that you want to save.
 2. On the toolbar, click **Configurations**.
 3. From the pop-up menu, select **Add Configuration**.
 4. In the **Add Configuration** dialog, enter a name for the configuration.
 5. Click **OK**.
-

RESULT

The configuration is saved and you can return to it at any time.

Channel Visibility Agents

Channel visibility agents allow you to show or hide all channels, selected channels, or channels with certain properties.

To open the **Channel Visibility Agents** pop-up menu, do one of the following:

- Click **Channel Visibility Agents** on the toolbar.
- In the **Channel Selector**, open the **Visibility** tab and right-click to open the context menu.

Showing Channels with Specific Properties

- To open the **Channel Visibility Agents** pop-up menu, click **Channel Visibility Agents** on the toolbar.

Show all Channels

Shows all channels of your project.

Show Only Selected Channels

Shows only channels that are selected.

Hide Selected Channels

Hides all channels that are selected.

Show Channels for Tracks with Data

Shows all channels for tracks with events or parts.

Show Channels for Tracks with Data at the Cursor Position

Shows all channels for tracks with events or parts at the cursor position.

Show Channels for Tracks with Data between the Locators

Shows all channels for tracks with events or parts between the locators.

Show Channels that are Connected to the First Selected Channel

Shows all channels that are connected to the channel you first selected.

NOTE

You can assign key commands for the channel visibility agents in the **Channel & Track Visibility** category of the **Key Commands** dialog.

Undoing/Redoing Visibility Changes

You can undo/redo up to 10 visibility changes.

PROCEDURE

1. On the **MixConsole** toolbar, click **Channel Visibility Agents**.
 2. Select **Undo Visibility Change** or **Redo Visibility Change**.
-

Rack Selector

The rack selector allows you to activate specific **MixConsole** functions that are organized in racks, such as routing, insert, or send handling.

Channel Racks

You can activate and deactivate the different channel racks in the **MixConsole**.

- To open the rack selector, click **Select Racks**.



Depending on the channel type, you can activate/deactivate the following racks:

Hardware

Allows you to control your audio hardware effects. This rack is only available if supported by your hardware.

Routing

Allows you to set up the input and output routing. For MIDI, you can also select the MIDI channel.

Pre (Filters/Gain/Phase)

For audio-related channels, it contains input filter and gain controls along with **Phase** and **Gain** controls. For MIDI channels, it contains an **Input Transformer** control.

Inserts

Allows you to select insert effects for your channel.

Equalizers (audio-related channels only)

Allows you to set the channel EQ.

Channel Strip (audio-related channels only)

Allows you to integrate channel strip modules, such as Gate, Compressor, EQ, Transformer, Saturator, and Limiter that allow you to enhance your sound.

Sends

Allows you to select send effects for your channel.

Cue Sends (audio-related channels only) (Cubase Pro only)

Allows you to activate and control the level and pan for up to 4 cue sends.

Direct Routing (Cubase Pro only)

Allows you to set and activate outputs for all selected channels at once.

Track Quick Controls

Allows you to add quick controls for instant access.

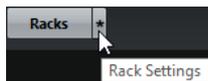
Device Panels (Cubase Pro only)

Allows you to view the available device panels.

Rack Settings

The **Rack Settings** pop-up menu allows you to make settings for the racks.

- To open the **Rack Settings** pop-up menu, click **Rack Settings**.



Exclusive Expanded Rack

Shows the selected rack exclusively and collapses the other racks.

Fixed Number of Slots

Shows all available slots for the **Inserts**, **Sends**, **Cues**, and **Quick Controls** racks.

Link Racks to Configurations

If this option is activated, the rack status is taken into account when you save and load a configuration.

Show Pre/Filters as <Combined Label & Setting>

Select **Combined Label & Setting** if you want to show the label and the setting in one line.

Select **Separate Label & Setting** if you want to show the label and the setting in separate lines.

Show Inserts as <Plug-in & Preset Names>

Select **Plug-in Names** if you want to show the plug-in names only.

Select **Plug-in & Preset Names** if you want to show the plug-in and the preset names.

Show All Channel Strip Controls

Shows all available controls on the **Channel Strip** rack.

Show One Channel Strip Type

Shows only one channel strip type at a time.

Show Sends as <Combined Destination & Gain>

Select **Combined Destination & Gain** if you want to show the destination and the gain in one line.

Select **Separate Destination & Gain** if you want to show the destination and the gain in separate lines.

Show Quick Controls as <Combined Destination & Value>

Select **Combined Destination & Value** if you want to show the destination and the value in one line.

Select **Separate Destination & Value** if you want to show the destination and the value in separate lines.

Linking Channels

In Cubase Pro, you can link selected channels in the **MixConsole** to form a link group. Any change that is applied to one channel is mirrored by all linked channels, depending on which settings are activated in the link group settings. In Cubase Artist, you can only link selected channels temporarily.

The **Link Group** options on the **MixConsole** toolbar allow you to link channels and to edit links and linking configuration.



Link Group options in Cubase toolbar.

Link Group Settings (Cubase Pro only)

The **Link Group Settings** dialog allows you to specify the channel settings that are linked.

- To open the **Link Group Settings** dialog, click **Link** on the **MixConsole** toolbar.

The following options are available:

Name

Allows you to enter a name for the link group.

Use VCA Fader

Activate this option to assign the link group to a VCA fader.

Volume

Activate this to link the volume of the linked channels.

Pan

Activate this to link the panorama of the linked channels.

EQ

Activate this to link the equalizers of the linked channels.

Dynamics (Compressor, Gate, etc.)

Activate this to link the dynamics of the linked channels.

Sends

Activate this to link the sends of the linked channels.

Inserts

Activate this to link the inserts of the linked channels.

Mute/Solo/Listen

Activate this to link the mute, solo, and listen states of the linked channels.

Automation Read/Write

Activate this to link the automation read/write states of the linked channels.

Routing

Activate this to link the routing of the linked channels.

Selection

Activate this to link the selection of the linked channels.

Record Enable/Monitor

Activate this to link the record enable/monitor states of the linked channels.

NOTE

By default the volume, sends, routing, and selection settings are activated. If you associate a link group to a VCA fader, only the sends and the routing parameters are activated.

Display Line (Cubase Pro only)

Whenever you create a link group, a display line is added on top of the fader section in the **MixConsole**.



The display line shows the number and the name of the created link group and provides a **Link Settings** pop-up menu that allows you to edit the link group settings.

On the display line, you can change the name of the link group by double-clicking and entering a different name. If you hold down a modifier key and double-click the name, the **Link Group Settings** dialog opens.

NOTE

If you use a VCA fader for the link group, the displayed link group name on the fader is also changed.

The pop-up menu provides the following options:

Unlink Selected Channels

Only available for a selected link group. Select this option to remove the link between the channels. This removes the link group. If you use a VCA fader, you must specify if you want to revert to the original automation of the linked channels. A VCA fader that controls this link group is not removed.

Edit Link Group Settings

Allows you to change the link group settings.

Included in Link Group: <name of link group>

Shows the link group to which the selected channel belongs. You can assign the selected channel to a different link group. This removes the channel from the current group. If you only want to remove the selected channel from the link group, select **None**.

Linked Channels

Shows which channels are linked in the link group.

RELATED LINKS

[Changing the Link Group Settings \(Cubase Pro only\)](#) on page 312

[Adding Channels to Link Groups \(Cubase Pro only\)](#) on page 312

[Removing Channels from Link Groups \(Cubase Pro only\)](#) on page 313

[VCA Faders \(Cubase Pro only\)](#) on page 345

Creating Link Groups (Cubase Pro only)

You can link several channels to form a link group.

PROCEDURE

1. Select the channels that you want to link.
 2. On the **MixConsole** toolbar, click **Link**.
 3. In the **Link Group Settings** dialog, activate the parameters that you want to link.
 4. Click **OK**.
-

RESULT

The number and name of the link group is indicated above the channel name in the display line.

NOTE

- If you link groups, insert and channel strip module linking is applied at the slot level. For example, if you change the settings for insert slot 3 on one channel, these changes are also applied to slot 3 on the other channels. Insert effects in other slots remain unaffected.
 - If you select a channel that belongs to a link group, all channels in this link group are selected by default. To prevent the multiple selection of all channels that belong to a link group, deactivate **Selection** in the **Link Group Settings** dialog.
-

RELATED LINKS

[Link Group Settings \(Cubase Pro only\)](#) on page 310

Changing the Link Group Settings (Cubase Pro only)

If you change a setting for a channel of a link group, the change is applied to the whole group.

- To change the link settings for an existing link group, select the group, on the **MixConsole** toolbar, click **Edit Link Group Settings**, and change the settings in the **Link Group Settings** dialog.
- To unlink channels, select one of the linked channels and click **Link** on the **MixConsole** toolbar.
- To prevent the multiple selection of all channels that belong to a link group, deactivate **Selection** in the **Link Group Settings** dialog.
- To make individual settings and changes for a channel in a link group, activate **Sus** on the **MixConsole** toolbar or press **Alt**.
- To make absolute instead of relative value changes, activate **Abs** on the **MixConsole** toolbar.

NOTE

The automation tracks for linked channels are not affected by the **Link** function.

RELATED LINKS

[Link Group Settings \(Cubase Pro only\)](#) on page 310

Adding Channels to Link Groups (Cubase Pro only)

You can add a channel to an existing link group.

PROCEDURE

1. On the display line of the channel that you want to add, open the pop-up menu.

2. Select **Included in Link Group: <None>** and select the link group.
-

RESULT

The channel is added to the link group.

Removing Channels from Link Groups (Cubase Pro only)

You can remove a channel from an existing link group.

PROCEDURE

1. On the display line of the channel that you want to remove, open the pop-up menu.
 2. Select **Included in Link Group: <link group name>** and from the link group list, select **None**.
 3. If the channel is controlled by a VCA fader, specify if the channel keeps the combined automation.
-

RESULT

The channel is removed from the link group.

Using Quick Link

You can activate the **Temporary Link Mode** to synchronize all touched parameters of selected channels.

PROCEDURE

1. Select the channels that you want to link.
2. On the **MixConsole** toolbar, activate **Q-Link**.

NOTE

You can also press **Shift-Alt** to temporarily link channels. In that case, the link is only active as long as you press the keys.

3. Change the parameters for one of the selected channels.
-

RESULT

The changes are applied to all selected channels until you deactivate **Q-Link**.

Functions Menu

The **Functions Menu** contains tools and shortcuts for settings and functions in the **MixConsole**.

- To open the **Functions Menu**, click **Functions Menu** in the top right corner of the **MixConsole**.



Scroll to Selected Channel

If this option is activated and you select a channel in the **Visibility** tab, the selected channel is automatically displayed in the **Fader** section.

Copy First Selected Channel's Settings

Copies the settings of the first selected channel.

Paste Settings to Selected Channels

Pastes the settings to the selected channels.

Zoom

Opens a submenu where you can increase or reduce the channel width and the rack height.

Open VST Connections

Opens the **VST Connections** window.

Control Room Cue Channels

Opens a submenu where you can activate/deactivate cue channels and change level and panning settings.

Constrain Delay Compensation

Allows you to activate/deactivate the **Constrain Delay Compensation** that keeps all channels in perfect sync and automatically compensates any delay inherent in VST plug-ins during playback.

Direct Routing: Summing Mode On/Off

Allows you to feed your signals to several outputs at the same time.

After Fader Listen Mode (Cubase Pro only)

Allows you to enable/disable that the signal of a listen-enabled channel is routed to the **MixConsole** channel after applying the fader and pan settings.

EQ/Filter Transition

Allows you to change the **EQ/Filter Transition** mode from **Soft** to **Quick**.

Save Selected Channels

Saves the settings for the selected channels.

Load Selected Channels

Loads the settings for the selected channels.

Global Meter Settings

Opens a submenu where you can set up the global meter settings.

Reset MixConsole Channels

Allows you to reset EQ, insert, and send effect settings for all or selected channels. Solo and mute buttons are deactivated, the volume fader is set to 0 dB, and pan is set to the center position.

Link MixConsoles

If you opened more than one **MixConsole**, you can link them.

Saving MixConsole Settings

You can save **MixConsole** settings for selected audio-related channels in the **MixConsole** and load them into any project.

PROCEDURE

1. Select the channels with the settings that you want to save.
2. Select **Functions > Save Selected Channels**.
3. In the file dialog, specify the file name and location.

4. Click **Save**.
-

RESULT

The settings for the selected channels are saved with the file extension `.vmx`. The input/output routing is not saved.

Loading MixConsole Settings

You can load **MixConsole** settings that have been saved for selected channels.

PROCEDURE

1. Select the same number of channels that you selected when you saved your **MixConsole** settings.
The loaded **MixConsole** settings are applied in the same order as originally saved. For example, if you have saved the settings for channels 4, 6, and 8, and apply these settings to channels 1, 2, and 3, the settings saved for channel 4 are applied to channel 1, the settings saved for channel 6 to channel 2, and so on.
 2. Select **Functions > Load Selected Channels**.
 3. In the **Load Selected Channels** dialog, select the `.vmx` settings file and click **Open**.
-

RESULT

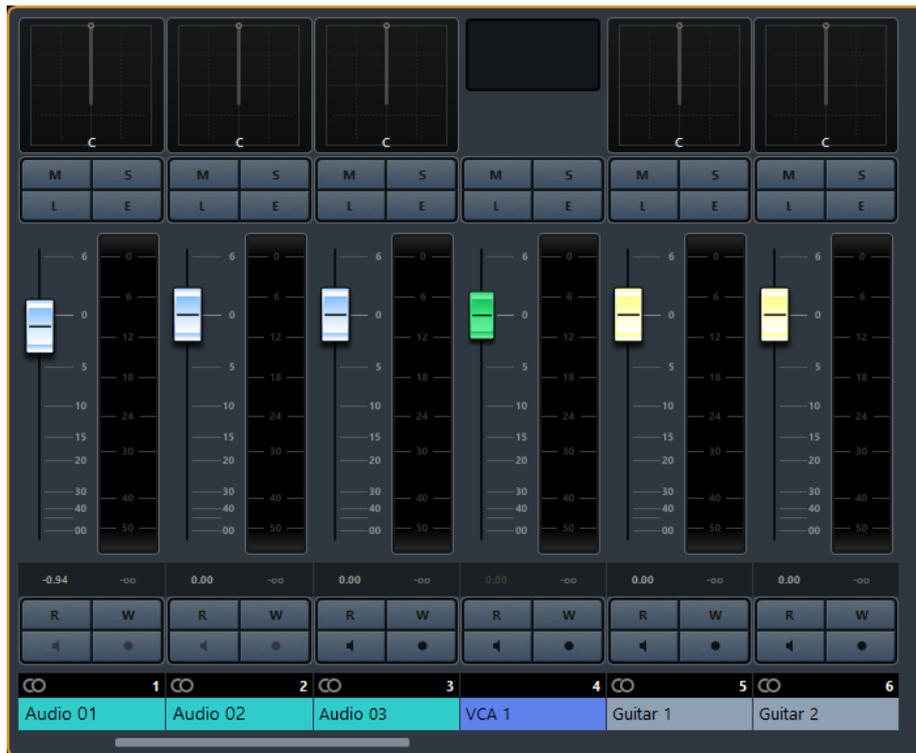
The channel settings are applied to the selected channels.

NOTE

When you apply loaded **MixConsole** settings to fewer channels, some of the saved settings are not applied. Since the saved settings are applied from left to right as shown in the **MixConsole**, the settings for the channels furthest to the right are not applied to any channels.

Fader Section

The fader section is the heart of the **MixConsole**. It shows input and output channels together with audio, instrument, MIDI, group, FX, VCA fader (Cubase Pro only), and ReWire channels.



NOTE

If a channel is deactivated in the channel selector or if its channel type is deactivated, it is not shown in the fader section. The lower zone **MixConsole** does not follow any visibility changes you perform in the **MixConsole** window and vice versa. It is linked to the track visibility of the **Project** window.

The fader section allows you to do the following:

- Edit link group settings (Cubase Pro only)
- Set the panorama
- Activate mute and solo
- Enable Listen mode
- Open the channel settings
- Set the volume
- Enable automation
- Setting input levels

NOTE

All fader section functions and settings are also available in the lower zone **MixConsole**.

RELATED LINKS

[Changing the Link Group Settings \(Cubase Pro only\)](#) on page 312

[Using Channel Settings](#) on page 318

[Write/Read Automation](#) on page 578

[Showing/Hiding Channels in the Lower Zone MixConsole](#) on page 296

Setting Pan

For each audio-related channel with at least a stereo output configuration, you can find a pan control at the top of the fader section. For MIDI channels, the pan control sends out MIDI pan messages. The result depends on how your MIDI instrument is set to respond to pan.

The pan control allows you to position a channel in the stereo spectrum. Cubase Pro only: This control is different for stereo and surround configurations. Channels with a multi-channel output configuration feature a miniature MultiPanner control.

- To make fine adjustments, hold down **Shift** when you move the pan control.
- To select the default center pan position, hold down **Ctrl/Cmd**, and click the pan control.
- To edit the value numerically, double-click the pan control.

RELATED LINKS

[Creating New Projects](#) on page 84

[Surround Sound \(Cubase Pro only\)](#) on page 563

Stereo Balance Panner

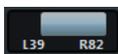
The stereo balance panner allows you to control the balance between the left and right channels. It is activated by default.



Stereo Combined Panner (Cubase Pro only)

With the stereo combined panner, the left and right pan controls are linked and keep their relative distance if you move them. It is available for channels with a stereo input and output configuration.

- To activate this panner, open the context menu for a pan control and select **Stereo Combined Panner**.



- To set the pan independently for the left and right channels, hold down **Alt** and drag left or right.
- To reverse the left and right channels, pan the left channel to the right and the right to the left.

The area between the pan controls changes the color to indicate that the channels are reversed.

- To sum two channels, set them to the same pan position (mono).
Note that this increases the volume of the signal.
- To specify the default stereo panner mode for new audio tracks, select **File > Preferences > VST**.

Panning Bypass

You can bypass the panning for all audio-related channels.

- To activate panning bypass, click the button to the left or press **Ctrl/Cmd-Alt-Shift** and click the pan control.
- To deactivate panning bypass, press **Ctrl/Cmd-Alt-Shift** and click again.

When panning is bypassed for a channel, the following happens:

- Mono channels are panned center.
- Stereo channels are panned hard left and right.

- Cubase Pro only: Surround channels are panned center.

Using Solo and Mute

You can silence one or several channels using **Solo** and **Mute**.

- To silence a channel, click **Mute**.
Click again to deactivate the mute state for the channel.
- To mute all other channels, click **Solo** for a channel.
Click again to deactivate the solo state.
- To deactivate the mute or solo states for all channels simultaneously, click **Deactivate All Mute States** or **Deactivate All Solo States**.
- To activate exclusive solo mode, hold down **Ctrl/Cmd** and click **Solo** for the channel.
The **Solo** buttons of all other channels are deactivated.
- To activate solo defeat for a channel, **Alt**-click **Solo**.



You can also click and hold **Solo** to activate solo defeat. In this mode the channel is not muted when you solo another channel. **Alt**-click again to deactivate solo defeat.

Listen Mode (Cubase Pro only)

The listen mode allows you to quickly check the signal that is coming from selected channels without interrupting and interfering with the actual mix. During a recording session it allows the sound engineer in the control room to attenuate the signal that is coming from one of the musicians while the recording continues undisturbed, for example.

NOTE

To enable the listen mode, you need to enable the **Control Room**.

- To enable the listen mode, click **Listen** for a channel.
This routes the channel to the **Control Room** without interrupting the signal flow.
- To turn off listen mode for all channels simultaneously, click **Deactivate all Listen States** on the **MixConsole** toolbar.

Using Channel Settings

You can open each **MixConsole** channel in a separate **Channel Settings** window. This allows for better overview and editing of the channel settings.

- To open the channel settings for a specific channel, click **E** in the fader section.



The **Channel Settings** window for audio-related channels is divided into several sections:

- **Channel Inserts**
- **Channel Faders**
- **Direct Routing**
- **Channel Sends**

The **Channel Strip** and **Equalizer** are always available.

The sections are arranged in zones at the left and right of the **Channel Settings** window.

- To show a pane with options to open or close the sections, position the mouse pointer at one of the edges of the **Channel Settings** window.

The channel settings are especially suitable for the following actions:

- Routing inserts
This is done on the **Routing** tab in the **Inserts** section.
- Moving the channel strip to Pre/Post-Inserts position
By default, the inserts are positioned before the channel strip in the signal flow. In the **Inserts** section you can change this by clicking the arrow at the top of the **Strip** tab. The tabs are swapped.
- Making EQ settings
The channel settings feature a large EQ curve display with several modes. By default, the equalizer controls are hidden, but you can click the little button at the top right corner to show the equalizer controls or the equalizer knob controls below the EQ curve.



- Panning sends
This is done on the **Panning** tab in the **Sends** section.
- Showing the output chain
If you click **Show Output Chain**  on the toolbar, the output chain is shown in the **Channel Faders** section. This allows you to keep track of more complicated output routings.
- Browsing through channels

RELATED LINKS

- [Equalizer Settings](#) on page 329
- [Routing Editor](#) on page 379
- [Direct Routing \(Cubase Pro only\)](#) on page 340

Browsing through Channels

Every channel has its own **Channel Settings** window, but you can view any channel's settings from a single window. This allows you to have a single Channel Settings window open in a convenient position on the screen and use it for all your EQ and channel effect settings.

To select a channel in the **Channel Settings** window, proceed as follows:

- To show the previous/next channel, click **Go to Previous/Next Channel**.
- To browse through the edited channels, click **Go to Last/Next Edited Channel**.
The buttons are only available if at least two channels have been edited.
- Click the channel name or the **Search** tool on the toolbar and select a channel.
- Select a channel in the **MixConsole** to select the corresponding channel in the **Channel Settings** window.
This is the default behavior. If this is not what you want, open the **Functions** menu and deactivate **Follow 'e' buttons or selection changes**.
- Select a track in the **Project** window to select the corresponding channel in the **MixConsole** and the **Channel Settings** window.
This is the default behavior. If this is not what you want, deactivate **Sync Selection in Project Window and MixConsole** in **Preferences > Editing > Project & MixConsole**.

Setting Volume

Each channel in the fader section of the **MixConsole** has a volume fader. The fader levels are displayed below the fader, in dB for audio-related channels and as MIDI volume (0 to 127) for MIDI channels.

- To change the volume, move the fader up or down.
- To make fine volume adjustments, press **Shift** while moving the faders.
- To reset the volume on its default value, press **Ctrl/Cmd** and click a fader.

For audio channels, the volume fader controls the volume of the channel before it is routed to an output bus, directly or via a group channel. For output channels the volume fader controls the master output level of all audio channels that are routed to an output bus. For MIDI channels the volume fader controls the volume changes in the **MixConsole** by sending out MIDI volume messages to the connected instruments that are set to respond to MIDI messages.

Global Meter Setting

You can change the meter characteristics for audio channels using the context menu of the channel meter.

Right-click the channel meter and select one of the following options from the **Global Meter Settings** menu:

Meter Peak Options - Hold Peaks

The highest registered levels are held and shown as static horizontal lines in the meter.

Meter Peak Options - Hold Forever

If this option is activated, the peak levels are shown until you reset the meters. If this option is deactivated, you can use the **Meters' Peak Hold Time** parameter (**File > Preferences > Metering**) to specify for how long the peak levels are held. The peak hold time can be between 500 and 30000 ms.

Meter Position - Input

If this option is activated, the meters show input levels for all audio channels and input/output channels. The input meters are post input gain.

Meter Position - Post-Fader

If this option is activated, the meters show post-fader levels.

Meter Position - Post-Panner

If this option is activated, the meters show post-fader levels and also reflect pan settings.

Reset Meters

Resets the meters.

Level Meters

The channel meters show the level when you play back audio or MIDI. The **Meter Peak Level** indicator shows the highest registered level.

- To reset the peak level, click the **Meter Peak Level** value.

NOTE

Input and output channels have clipping indicators. When they light up, lower the gain or the levels until the indicator is no longer lit.

Input Levels

When recording digital sound, it is important to set the input levels high enough to ensure low noise and high audio quality. At the same time, you must avoid clipping (digital distortion).

Setting Input Levels

PROCEDURE

1. Select **Functions > Global Meter Settings > Meter Position** and activate **Input**.
In this mode, the input channel level meters show the level of the signal at the input of the bus, before any adjustments, such as input gain, EQ, effects, level, or pan are made. This allows you to check the level of the unprocessed signal coming into the audio hardware.
2. Play back the audio and check the level meter for the input channel.
The signal should be as loud as possible without exceeding 0 dB that is the clipping indicator for the input bus should not light up.
3. If necessary, adjust the input level in one of the following ways:
 - Adjust the output level of the sound source or the external mixer.
 - If possible, use the audio hardware's own application program to set the input levels. Refer to the documentation for the audio hardware.
 - If your audio hardware supports the ASIO control panel function, it may be possible to make input level settings. To open the ASIO control panel, select **Devices > Device Setup** and in the list to the left (below **VST Audio System**), select your audio card. When this is selected, you can open the control panel by clicking **Control Panel** in the settings section to the right.
4. Optional: Select **Functions > Global Meter Settings > Meter Position** and activate **Post-Fader**.

NOTE

This allows you to check the level of the audio being written to a file on your hard disk which is only necessary if you make any adjustments to the input channel.

5. Optional: In the **Channel Racks** section, in the **Inserts** rack, click a slot and select an effect, or in the **Equalizers** rack, make your EQ settings.
For some effects you may want to adjust the level of the signal going into the effect. Use the input gain function for this. Press **Shift** or **Alt** to adjust the input gain.
 6. Play back the audio and check the level meter of the input channel.
The signal should be reasonably loud without exceeding 0 dB that is the clipping indicator for the input bus should not light up.
 7. If necessary, use the input channel fader to adjust the signal level.
-

Clipping

Clipping typically occurs in the audio hardware when an analog signal is too loud and therefore converted to digital in the hardware's A/D converters.

Clipping can also occur when the signal from the input bus is written to a file on your hard disk. The reason for this is that you can make settings for the input bus, adding EQ, effects, etc. to the signal while it is being recorded. This may raise the level of the signal, which causes clipping in the recorded audio file.

Working with Channel Racks

The **Channel Racks** section contains specific **MixConsole** functions, such as routing, insert, or send handling. These are organized in racks.



NOTE

The lower zone **MixConsole** features the **Inserts** and the **Sends** rack only.

RELATED LINKS

- [Routing](#) on page 324
- [Pre \(Filters/Gain/Phase\)](#) on page 326
- [Inserts](#) on page 327
- [Equalizers \(EQ\)](#) on page 328
- [Channel Strips](#) on page 331
- [Sends](#) on page 339
- [Cue Sends \(Cubase Pro only\)](#) on page 339
- [Direct Routing \(Cubase Pro only\)](#) on page 340
- [Track Quick Controls](#) on page 342
- [Device Panels](#) on page 343

Copying and Moving Rack and Channel Settings

You can use drag and drop to copy or move rack and channel settings.

NOTE

This function is only available in the **MixConsole** window.

Drag and drop works between different channels or different rack slots on the same channel. When you drag, a visual feedback indicates the sections where you can drop your settings.

The following applies:

- To copy the rack settings from one rack to another, drag the rack and drop it on the rack to which you want to copy the settings.
- To move the rack settings from one rack to another, press **Alt**, drag the rack, and drop it on the rack to which you want to move the settings.
- To copy the channel settings from one channel to another, drag the channel and drop it on the channel to which you want to copy the settings.

You can copy rack and channel settings between different types of channels, provided that the target channels have corresponding settings.

- For example, copying from input/output channels leaves the sends settings in the target channel unaffected.
- Cubase Pro only: For projects with surround sound, any insert effects that are routed to surround speaker channels become muted when the settings are pasted to a mono or stereo channel.

Routing

The **Routing** rack allows you to configure input and output routing, that is, setting up input and output busses.

NOTE

This channel rack is only available in the **MixConsole** window.

Input busses are used when you record on an audio track. In this case, you must select from which input bus the audio is received.

NOTE

The settings that you make for the input channel will be a permanent part of the recorded audio file.

Output busses are used when you play back an audio, group, or FX channel. In this case, you must route the channel to an output bus.

You can route the outputs from multiple audio channels to a group. For example, to control the channel levels using one fader, and to apply the same effects and equalization to all the channels.

Setting up Routing

PREREQUISITE

Set up busses and group channels in the **VST Connections** window.

PROCEDURE

1. On the **MixConsole** toolbar, click **Racks** and activate **Routing** to show the **Routing** rack above the fader section.
 2. Click one of the slots of the **Routing** rack to open the input or the output routing pop-up menu for a channel.
 3. In the routing selector, select an entry.
 - To set up the routing for multiple selected channels simultaneously, press **Shift-Alt** and select a bus.
 - To set several selected channels to incrementing busses (the second selected channel to the second bus, the third to the third bus, etc.), press **Shift** and select a bus.
 - To disconnect input or output bus assignments, select **No Bus**.
-

Input Busses

The input routing selector only lists busses that correspond to the channel configuration.

NOTE

If you select a group channel as input for an audio channel, you can record a downmix.

Input Routing Configurations for Mono Channels

- Mono input busses or individual channels within a stereo or surround input bus (Cubase Pro only).
- External inputs configured on the **Studio** tab of the **VST Connections** window. These can be mono or individual channels within a stereo or surround bus (Cubase Pro only). They can also be routed to the **Talkback** input.
- Mono output busses, mono group output busses, or mono FX channel output busses. These should not lead to feedback.

RELATED LINKS

[Routing](#) on page 324

Input Routing Configurations for Stereo Channels

- Mono or stereo input busses or stereo child busses within a surround bus (Cubase Pro only).
- External inputs that are configured on the **Studio** tab of the **VST Connections** window. These can be mono input busses or stereo input busses. They can also be routed to the **Talkback** input.
- Mono or stereo output busses, mono or stereo group output busses, and mono or stereo FX channel output busses. These should not lead to feedback.

RELATED LINKS

[Routing](#) on page 324

Input Routing Configurations for Surround Channels (Cubase Pro only)

- Surround input busses.
- External inputs that are configured on the **Studio** tab of the **VST Connections** window. These must have the same input configuration.
- Output busses. These must have the same input configuration and should not lead to feedback.

RELATED LINKS

[Routing](#) on page 324

Output Busses

For output busses any assignment is possible.

Using Group Channels

You can route the outputs from multiple audio channels to a group. This enables you to control the channel levels using one fader, apply the same effects and EQ to all channels, etc. You can also select a group channel as input for an audio track, to record a downmix of separate tracks, for example.

PREREQUISITE

You have created and set up a group channel track in stereo.

PROCEDURE

1. Route the group channel track to an output bus.
 2. Add effects to the group channel as insert effects.
 3. Route the mono audio track to the group channel.
-

RESULT

The signal from the mono audio track is sent directly to the group, where it passes through the insert effect, in stereo.

Pre (Filters/Gain/Phase)

The **Pre** rack for audio-related channels features a high-cut and a low-cut filter as well as gain and phase settings.

NOTE

This channel rack is only available in the **MixConsole** window.

For MIDI channels the **Pre** rack allows you to open the **Input Transformer**.

NOTE

You cannot edit the **Pre** rack settings in the EQ curve display.

RELATED LINKS

[Input Transformer Window](#) on page 639

[Equalizer Settings](#) on page 329

Making Filter Settings

Each audio-related channel has separate high-cut and low-cut filters that allow you to attenuate signals with frequencies that are higher or lower than the cutoff frequency.

PROCEDURE

1. On the **MixConsole** toolbar, click **Racks** and activate **Pre (Filters/Gain/Phase)** to show the **Pre** rack above the fader section.
 2. Click to the left of the high-cut filter to activate the high-cut filter. You have the following options:
 - Drag the slider to adjust the cutoff frequency.
The available range spans from 20 kHz to 50 Hz.
 - Click **Select Filter Slope** on the right of the high-cut filter to select a filter slope.
You can choose between 6, 12, 24, 36, and 48 dB. The default value is 12 dB.
 3. Click to the left of the low-cut filter to activate the low-cut filter. You have the following options:
 - Drag the slider to adjust the cutoff frequency.
The available range spans from 20 Hz to 20 kHz.
 - Click **Select Filter Slope** on the right of the low-cut filter to select a filter slope.
You can choose between 6, 12, 24, 36, and 48 dB. The default value is 12 dB.
-

RESULT

The changed settings are visible in the curve display. If you deactivate the high-cut and low-cut filters, the filter curves are removed from the display. Bypassed high-cut and low-cut filters are displayed in a different color.

Making Input Gain Settings

The **Pre-Gain** slider allows you to change the level of a signal before it reaches the EQ and the effects section. This is useful as the level going into certain effects can change the way the signal

is affected. A compressor, for example, can be driven harder by raising the input gain. Gain can also be used to boost the level of poorly recorded signals.

PROCEDURE

1. On the **MixConsole** toolbar, click **Racks** and activate **Pre (Filters/Gain/Phase)** to show the **Pre** rack above the fader section.
 2. Drag the **Gain** slider to the left or to the right to cut or boost the gain.
-

Making Phase Settings

Each audio-related channel and input/output channel has a **Phase** button that allows you to correct the phase for balanced lines and microphones that are wired backwards or that are out of phase due to their positioning.

PROCEDURE

1. On the **MixConsole** toolbar, click **Racks** and activate **Pre (Filters/Gain/Phase)** to show the **Pre** rack above the fader section.
 2. Activate **Phase** to invert the phase polarity for the signal.
-

Inserts

The **Inserts** rack for audio-related channels features insert effect slots that allow you to load insert effects for a channel. For MIDI channels you can load MIDI inserts.

For further information, see the separate PDF document **Plug-in Reference**.

RELATED LINKS

[Audio Effects](#) on page 371

Adding Insert Effects

PROCEDURE

1. On the **MixConsole** toolbar, click **Racks** and activate **Inserts** to show the Inserts rack above the fader section.
 2. Click one of the insert slots to open the insert selector.
 3. Click an insert effect to select it.
-

RESULT

The selected insert effect is loaded and automatically activated. Its plug-in panel opens.

Moving Inserts to Post-Fader or Pre-Fader Position

For each audio-related channel, you can add 6 pre-fader and 2 post-fader inserts.

PROCEDURE

1. Right-click an insert effect in a pre-fader position.
 2. From the context menu, select **Move to Post-Fader Slot**.
To move a post-fader insert to a pre-fader position, open its context menu and select **Move to Pre-Fader Slot**.
-

Bypassing Insert Effects

- To bypass all inserts, click **Bypass** at the top of the **Inserts** rack.
- To bypass a single insert, click the button on the left of the inserts slot.

- To deactivate bypass, click the button again.

Activating Side-Chain for Inserts

Some of the inserts feature side-chain functionality.

PROCEDURE

1. Right-click an insert effect.
 2. From the context menu, select **Activate Side-Chain**.
-

Saving/Loading FX Chain Presets

You can save and load all insert rack settings using FX chain presets. FX chain presets have the file name extension `.fxchainpreset`.

PROCEDURE

- In the top right corner of the **Inserts** rack, open the **Presets** pop-up menu and perform one of the following actions:
 - To save the current settings as a preset, select **Save FX Chain Preset** and name your preset.
 - To load a preset, select **Load FX Chain Preset** and select a preset.

NOTE

You can also apply inserts together with EQ and channel strip settings from track presets. You can load, tag, and save FX chain presets in the **MediaBay**.

Equalizers (EQ)

The **Equalizers (EQ)** rack is only available for audio-related channels. It features a built-in parametric equalizer with up to 4 bands for each audio channel.

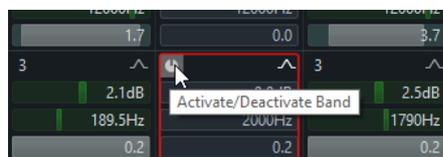
NOTE

This channel rack is only available in the **MixConsole** window.

Activating Equalizer Bands

PROCEDURE

1. On the **MixConsole** toolbar, click **Racks** and activate **Equalizers** to show the **EQ** rack above the fader section.
2. Click **Activate Band** to activate an EQ band.



Equalizer Settings

You can make equalizer settings for the 4 bands. These have different default frequency values and different Q names. However, they all have the same frequency range (20 Hz to 20 kHz). You can specify different filter types for each individual module.



1. Bypass EQ

Click to bypass all EQ bands.

2. Curve Display

Click on the display in a channel to show a larger version. The display is also available in the **Equalizers** section of the **Inspector** and in the **Channel Settings** dialog.

Hovering with the mouse over the display shows a cross-hair cursor. The current mouse position shows the frequency, note value, offset, and level at the top or bottom of the display.

Click and hold to add a curve point and activate the corresponding EQ band. Double-click the curve point to deactivate it. Drag the curve point up or down to adjust the gain. Press **Ctrl/Cmd** to edit only the gain. Drag left or right to adjust the frequency. Press **Alt** to edit only the frequency. Press **Shift** while dragging to set the Q-factor. To invert the EQ curve, open the context menu and select **Invert EQ Settings**.

The final curve shows the EQ settings as well as active high-cut and low-cut filters of the **Pre** rack settings. Bypassed filter settings are shown in a different color than the active settings. Disabled filter settings are hidden from the display.

NOTE

You cannot edit the high-cut and low-cut filters in the curve display. To edit the filters, open the **Pre** rack.

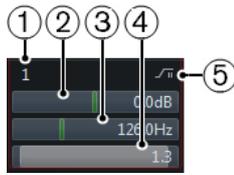
3. Select Preset

Opens a pop-up menu where you can load/save a preset.

4. Activate Band

Click to activate/deactivate an EQ band.

Band Settings



1. **Activate Band**

Activates the equalizer band.

2. **Gain**

Set the amount of cut or boost. The range is ± 24 dB.

3. **Frequency**

Sets the center frequency of the frequency range to be cut or boosted. You can set the frequency either in Hz or as a note value. If you enter a note value, the frequency is automatically displayed in Hz. For example, a note value of A3 sets the frequency to 440 Hz. When you enter a note value, you can also enter a cent offset. For example, enter A5 -23 or C4 +49.

NOTE

Ensure that you enter a space between the note and the cent offset. Only in this case, the cent offsets are taken into account.

4. **Q-Factor**

Determines the width of the affected frequency range. Higher values give narrower frequency ranges.

5. **Type**

Opens a pop-up menu where you can select an EQ type for the band. Bands 1 and 4 can act as parametric, shelving, or high/low-cut filters. EQ bands 2 and 3 are always parametric filters.

RELATED LINKS

[Making Filter Settings](#) on page 326

Saving/Loading EQ Presets

You can save and load EQ presets.

PROCEDURE

- In the top right corner of the **EQ** rack, open the presets pop-up menu and perform one of the following actions:
 - To save the current settings as a preset, select **Save Preset** and name your preset.
 - To load a preset, select **Load Preset** and select a preset.

NOTE

You can also apply EQ together with insert and channel strip settings from track presets. You can load, tag, and save EQ presets in the **MediaBay**.

Channel Strips

The **Channel Strip** rack is only available for audio-related channels. It allows you to load built-in processing modules for separate channels.

NOTE

This channel rack is only available in the **MixConsole** window.

Channel Strip Modules

The channel strips allow you to apply modules directly to specific channels. You can change the position of specific modules in the signal flow via drag and drop.

Gate

Allows you to silence audio signals below a set threshold level. As soon as the signal level exceeds the set threshold, the gate opens to let the signal through.

Compressor

Allows you to create smooth compression effects. Drag the compressor up or down to change its position in the signal flow.

EQ

Allows you to make EQ settings.

Tools

Provides various tools.

Sat

Allows you to add warmth to the sound.

Limit

Allows you to avoid clipping even at high levels.

Noise Gate

Noise gating silences audio signals below a set threshold. As soon as the signal level exceeds the threshold, the gate opens to let the signal through.

Threshold (-60 to 0 dB)

Determines the level at which **Gate** is activated. Signal levels above the set threshold trigger the gate to open, and signal levels below the set threshold close the gate.

Side-Chain

Activates the external side-chain.

Release (10 to 1000 ms or Auto mode)

Sets the time after which the gate closes (after the set **Hold** time). If **Auto Release** is activated, **Gate** automatically finds the best release setting for the audio material.

State LED

Indicates whether the gate is open (LED lights up in green), closed (LED lights up in red), or in an intermediate state (LED lights up in yellow).

Attack (0.1 to 1000 ms)

Sets the time after which the gate opens when it is triggered.

Range

Adjusts the attenuation of the gate when it is shut. If **Range** is set to , the gate is completely shut. The higher the value, the higher the level of the signal that passes through the shut gate.

Activate Filter

Activates/Deactivates the internal side-chain and allows you to set up a filter to modify the signal detection.

Filter Frequency (50 to 20000 Hz)

If the internal side-chain is activated, this parameter sets the filter frequency for the signal detection.

Q-Factor (0.01 to 10000)

If the internal side-chain is activated, this parameter sets the resonance of the filter for the signal detection.

Listen Filter

Allows you to monitor the filtered signal.

Compressor

This channel strip module reduces the dynamic range of the audio, making softer sounds louder or louder sounds softer, or both. Open the pop-up menu to select between **Standard Compressor**, **Tube Compressor**, and **Vintage Compressor**.

Standard Compressor

Allows you to create smooth compression effects. Drag the compressor up or down to change its position in the signal flow.

Threshold (-60 to 0 dB)

Determines the level where the compressor kicks in. Only signal levels above the set threshold are processed.

Side-Chain

Activates the external side-chain.

Ratio (1:1 to 8:1)

Sets the amount of gain reduction that is applied to signals above the set threshold. A ratio of 3:1 means that for every 3 dB the input level increases, the output level increases by 1 dB.

Gain Reduction LED

Indicates the amount of compression of the signal.

Attack (0.1 to 100 ms)

Determines how fast the compressor responds to signals above the set threshold. If the attack time is long, more of the early part of the signal passes through unprocessed.

Release (10 to 1000 ms or Auto mode)

Sets the time after which the gain returns to the original level when the signal drops below the threshold. If **Auto** is activated, the compressor automatically finds the best release setting for the audio material.

Make-up (0 to 24 dB or Auto mode)

Compensates for output gain loss that is caused by compression. If **Auto** is activated, the knob becomes dark and the output is automatically adjusted for gain loss.

Tube Compressor

This versatile compressor with integrated tube-simulation allows you to achieve smooth and warm compression effects. The VU meter shows the amount of gain reduction. **Tube Compressor** features an internal side-chain section that lets you filter the trigger signal.

Input (-24.0 to 48.0 dB)

Determines the compression amount. The higher the input gain, the more compression is applied.

Side-chain

Activates the external side-chain.

Output (-12.0 to 12.0 dB)

Sets the output gain.

Gain Reduction LED

Indicates the amount of compression of the signal.

Attack (0.1 to 100.0 ms)

Determines how fast the compressor responds. If the attack time is long, more of the initial part of the signal passes through unprocessed.

Release (10 to 1000 ms or Auto mode)

Sets the time after which the gain returns to the original level. If **Auto** is activated, **Tube Compressor** automatically finds the best release setting for the audio material.

Drive (1.0 to 6.0)

Controls the amount of tube saturation.

Mix (0 to 100)

Sets the level balance between the dry signal and the wet signal.

VintageCompressor

VintageCompressor is modeled after vintage type compressors.

Input (-24 to 48 dB)

In combination with the **Output** setting, this parameter determines the compression amount. The higher the input gain setting and the lower the output gain setting, the more compression is applied.

Side-chain

Activates the external side-chain.

Output (-48 to 24 dB)

Sets the output gain.

Gain Reduction LED

Indicates the amount of compression of the signal.

Attack (0.1 to 100 ms)

Determines how fast the compressor responds. If the attack time is long, more of the early part of the signal passes through unprocessed.

Punch (On/Off)

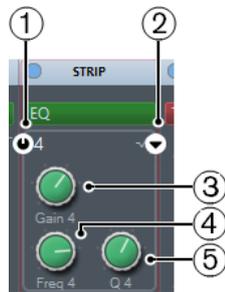
If this option is activated, the early attack phase of the signal is preserved, retaining the original punch in the audio material, even with short **Attack** settings.

Release (10 to 1000 ms or Auto mode)

Sets the time after which the gain returns to its original level. If **Auto** is activated, **Vintage Compressor** automatically finds the best release setting for the audio material.

EQ

You can make equalizer settings for the 4 bands. These have different default frequency values and different Q names. However, they all have the same frequency range (20 Hz to 20 kHz). You can specify different filter types for each individual module.



1. **Activate Band x**

Activates the equalizer band.

2. **Select EQ Band x Type**

Opens a pop-up menu where you can select an EQ type for the band. Bands 1 and 4 can act as parametric, shelving, or high/low-cut filters. EQ bands 2 and 3 are always parametric filters.

3. **Gain**

Sets the amount of cut or boost.

4. **Freq**

Sets the center frequency of the frequency range to be cut or boosted.

5. **Q**

Determines the width of the affected frequency range. Higher values give narrower frequency ranges.

Tools

Provides various tools.

DeEsser

This channel strip module reduces excessive sibilance, primarily for vocal and speech recordings. Basically, it is a special type of compressor that is tuned to be sensitive to the frequencies produced by the s-sound. Close proximity microphone placement and equalizing can lead to situations where the overall sound is just right, but there is a problem with sibilants.

Reduction

Controls the intensity of the de-essing effect.

Side-Chain

Activates the internal side-chain filter. The input signal can then be shaped according to the filter parameters. Internal side-chaining can be useful for tailoring how the gate operates.

Release

Sets the time after which the de-essing effect returns to zero when the signal drops below the threshold.

Gain Reduction LED

Indicates the amount of compression of the signal.

Threshold

If **Auto** is deactivated, you can use this control to set a threshold for the incoming signal level above which the plug-in starts to reduce the sibilants.

Auto

Automatically and continually chooses an optimum threshold setting independent of the input signal. The **Auto** option does not work for low-level signals (< -30 db peak level). To reduce the sibilants in such a signal, set the threshold manually.

Low-Frequency

Allows you to set the low frequency band.

High-Frequency

Allows you to set the high frequency band.

Solo

Allows you to solo the frequency band to find the appropriate position and width of that band.

Diff

Allows you to listen to the sounds that the de-esser removes from the signal.

EnvelopeShaper

This channel strip module can be used to attenuate or boost the gain of the attack and release phase of audio material. You can use the knobs to change parameter values. Be careful with levels when boosting the gain and if needed reduce the output level to avoid clipping.

Attack (-20 to 20 dB)

Changes the gain of the attack phase of the signal.

SC (Side-Chain)

Activates the external side-chain.

Release (-20 to 20 dB)

Changes the gain of the release phase of the signal.

Length (5 to 200 ms)

Determines the length of the attack phase.

Output (-24 to 12 dB)

Sets the output level.

Sat

Allows you to add warmth to the sound. Open the pop-up menu to select between **Magneto II**, **Tape Saturation**, and **Tube Saturation**.

Magneto II

This channel strip module simulates the saturation and compression of recording on analog tape machines.

Saturation

Determines the amount of saturation and the generation of overtones. This leads to a small increase in input gain.

Dual Mode

Simulates the use of two tape machines.

Saturation On/Off

Activates/Deactivates the saturation effect.

Output

Allows you to adjust the output level.

Saturation Amount LED

Indicates the amount of saturation of the signal.

Low-Frequency

Sets the frequency range of the spectrum band to which the tape effect is applied.

To avoid the saturation of lower frequencies, set the value to 200 Hz or 300 Hz.

High-Frequency

Sets the frequency range of the spectrum band to which the tape effect is applied.

To avoid the saturation of very high frequencies, set the **Freq Hi** parameter to values below 10 kHz.

Solo

Allows you to hear only the set frequency range including the tape simulation effect. This helps you to determine the appropriate frequency range.

HF-Adjust

Sets the amount of high frequency content of the saturated signal.

HF-Adjust On/Off

Activates/Deactivates the **HF-Adjust** filter.

Tape Saturation

This channel strip module simulates the saturation and compression of recording on analog tape machines.

Drive

Controls the amount of tape saturation.

Dual Mode

Simulates the use of two tape machines.

Auto Gain

Adjusts the gain automatically.

Output

Sets the output gain.

Drive Amount LED

Indicates the amount of drive of the signal.

Low-Frequency

This is a low shelving filter with fixed frequency.

High-Frequency

This is a Hi Cut filter. Use the frequency fader to reduce harshness of the output signal.

Tube Saturation

This channel strip module simulates the saturation and compression of recording of analogue tube compressors.

Drive

Controls the amount of tube saturation.

Output Gain

Sets the output gain.

Drive Amount LED

Indicates the amount of drive of the signal.

Low-Frequency

This is a low shelving filter with fixed frequency.

High-Frequency

This is a Hi Cut filter. Use the frequency fader to reduce harshness.

Limit

Allows you to avoid clipping even at high levels. Open the pop-up menu to select between **Brickwall Limiter**, **Maximizer**, and **Standard Limiter**.

Brickwall Limiter

Brickwall Limiter ensures that the output level never exceeds a set limit.

Due to its fast attack time, **Brickwall Limiter** can reduce even short audio level peaks without creating audible artifacts. However, this channel strip module creates a latency of 1 ms.

Threshold (-20 to 0 dB)

Determines the level where the limiter kicks in. Only signal levels above the set threshold are processed.

Release (ms)

Sets the time after which the gain returns to the original level when the signal drops below the threshold. If **Auto** is activated, **Brickwall Limiter** automatically finds the best release setting for the audio material.

Gain Reduction LED

Displays the amount of gain reduction.

Maximizer

This channel strip module raises the loudness of audio material without the risk of clipping.

Optimize

Determines the loudness of the signal.

Output (-24 to 6 dB)

Determines the maximum output level. Set this to 0 dB to avoid clipping.

Gain Reduction LED

Displays the amount of gain reduction.

Mix (0 to 100)

Sets the level balance between the dry signal and the wet signal.

Standard Limiter

This channel strip module is designed to ensure that the output level does not exceed a set output level, to avoid clipping in following devices. **Limiter** can adjust and optimize the **Release** parameter automatically according to the audio material, or it can be set manually.

Input (-24 to 24 dB)

Adjusts the input gain.

Output (-24 to 6 dB)

Determines the maximum output level.

Gain Reduction LED

Displays the amount of gain reduction.

Release (0.1 to 1000 ms or Auto mode)

Sets the amount of time it takes for the gain to return to its original level. If **Auto** is activated, **Limiter** automatically finds the best release setting for the audio material.

Saving/Loading Strip Presets

You can save and load strip presets. Strip presets have the file name extension `.strippreset`.

PROCEDURE

- In the top right corner of the **Channel Strip** rack, open the **Presets** pop-up menu and perform one of the following actions:
 - To save the current settings as a preset, select **Save Strip Preset** and name your preset.
 - To load a preset, select **Load Strip Preset** and select a preset.

NOTE

You can also apply channel strip settings together with insert and EQ settings from track presets. You can load, tag, and save strip presets in the **MediaBay**.

RELATED LINKS

[Loading Strip Presets](#) on page 556

Sends

The **Sends** rack for audio-related channels features send effect slots that allow you to load send effects and value sliders that allow you to determine the send level for a channel. For MIDI channels the **Sends** rack features send effect slots that allow you to load send effects.

Adding Send Effects

PROCEDURE

1. On the **MixConsole** toolbar, click **Racks** and activate **Sends** to show the rack above the fader section.
 2. Click one of the send slots to open the send selector.
 3. Click a send effect to select it.
The selected send effect is loaded.
 4. Click on the left of the slot to activate the send.
-

Bypassing Send Effects

- To bypass all sends, click the bypass button at the top of the **Sends** rack.
- To deactivate bypass, click the button again.

Adding FX Channels to a Send

PROCEDURE

1. Right-click on the send slot to open the context menu.
 2. Select **Add FX Channel to <send name>**.
 3. In the **Add FX Channel Track** window, select the effect and configuration.
 4. Click **Add Track**.
-

RESULT

The FX channel track is added in the **Project** window, and the send is automatically routed to it.

Cue Sends (Cubase Pro only)

Cue sends allow you to create discrete cue mixes that performers can listen to during recording. Essentially, cue sends are stereo aux sends that are routed to cue channel outputs in the **Control Room Mixer**.

NOTE

This channel rack is only available in the **MixConsole** window.

For every cue channel defined in the **VST Connections** window, each channel in the **MixConsole** has a cue send, with level, pan, and pre/post-fader selection.

Adding Cue Sends (Cubase Pro only)

PREREQUISITE

Create a cue channel in the **VST Connections** window and activate the **Control Room**.

PROCEDURE

1. On the **MixConsole** toolbar, click **Racks** and activate **Cue Sends** to show the rack above the fader section.
 2. Click one of the slots to open the send selector.
The cue sends are displayed.
 3. Click on the left of the slot to activate the cue send.
-

RESULT

You can now change the level and pan settings.

Direct Routing (Cubase Pro only)

The **Direct Routing** rack allows you to set and activate outputs for all selected channels at once.

NOTE

This channel rack is only available in the **MixConsole** window.

In addition to the main output you can set up 7 routing destinations that are positioned post-fader and post-panner in the signal path. This allows you to switch the destination of channels, and create different mix versions in one go. The direct routing features are available for audio, instrument, FX channel tracks, groups, and output busses.

Setting Up Direct Routing

In the **Direct Routing** rack you can assign up to 8 routing destinations to each channel.

PROCEDURE

1. On the **MixConsole** toolbar, click **Racks** and activate **Direct Routing**.
The **Direct Routing** rack is shown above the fader section.
2. Select all channels for which you want to set up the same destinations, press **Shift-Alt** and click in the first slot of the **Direct Routing** rack.
3. In the routing selector, select the main output for the selected channels.

NOTE

We recommend that you choose the same set of destinations for all channels that belong together. The main output should also have the widest channel configuration, since it is used as a reference for all additional output destinations.

4. Click in the next destination slot and select another output.
 5. Do this for as many destination slots as required (up to 8).
After routing your audio tracks to groups, you can route the groups to output busses.
 6. For each channel, you can now activate the appropriate routing destination by clicking on the corresponding slot.
The active routing destination lights up.
-

Automating Destination Switches

PROCEDURE

1. Play back your project and take note of the positions where routing changes are necessary.
2. Write-enable the corresponding track.
3. At the right moment, click on the routing destination to which you want to switch.

The new destination is now active, and the switch has been recorded as automation data.

4. Continue to record destination changes for your project.

NOTE

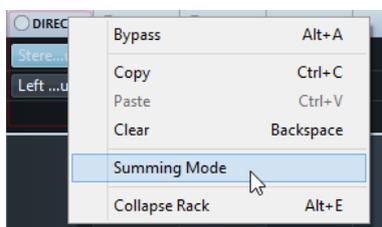
To switch destinations for multiple channels simultaneously, select these channels and keep **Shift-Alt** pressed when activating a different destination.

Feeding Signals to Multiple Destinations

Direct routing offers a summing mode, allowing you to feed your signals to several outputs at the same time. This is useful if you want to apply an effect to several stems at the same time, for example.

PROCEDURE

1. Set up your output busses as routing destinations.
2. In the **Direct Routing** rack, open the context menu and activate **Summing Mode** for all channels that you want to sum.



NOTE

To activate this setting for all channels at once use the **Link** function.

3. Activate all outputs to which you want to route the selected channels.
-

RELATED LINKS

[Setting up Routing](#) on page 324

Automatic Downmixing

The output in the first **Direct Routing** slot defines the channel width. Since the other destinations are positioned post-panner in the signal path, they have the same channel width to start with, and the signal needs to be converted accordingly by downmixing. Cubase does that automatically.

NOTE

Always select the output with the widest channel configuration in the first slot. It is not recommended to use a setup where the main output has less channels than the direct routing destination even though it is technically possible. Upmixing might lead to unexpected side effects.

When performing an automatic downmix from 5.1 to stereo, the levels are adjusted as follows:

Automatic Downmixing from 5.1 to stereo

	L	R	C	Lfe	Ls	Rs
L	0.0		-3.01	-3.01	-6.02	

	L	R	C	Lfe	Ls	Rs
R		0.0	-3.01	-3.01		-6.02

Center and Lfe signals are split to L and R channels, Ls and Rs are sent to L and R respectively, but reduced in volume.

When performing an automatic downmix from 7.1 to 5.1 the levels are adjusted as follows:

Automatic Downmixing from 7.1 to 5.1

	L	R	C	Lfe	Ls	Rs	Lc	Rc
L	0.0						-3.01	
R		0.0						-3.01
C			0.0				-3.01	-3.01
Lfe				0.0				
Ls					0.0			
Rs						0.0		

Lc and Rc signals are split to L/R respectively and the center channel.

Track Quick Controls

Track Quick Controls give you instant access to up to 8 different parameters, for example, track, effect, or instrument controls. This saves you from having to click your way through the various windows and sections pertaining to your track.

NOTE

This channel rack is only available in the **MixConsole** window.

Adding Track Quick Controls

PROCEDURE

1. On the **MixConsole** toolbar, click **Racks** and activate **Track Quick Controls** to show the rack above the fader section.
2. Click one of the slots to open the Quick Controls selector.
3. Click a parameter to select it.

RESULT

The selected parameter is loaded and automatically activated as Track Quick Control.

Assigning Parameters from Racks or Channel Settings

You can assign several parameters to Quick Control slots directly from within racks or channel settings in the **MixConsole**.

Some specific racks and channel settings allow you to add several parameters directly to the **Quick Controls** section in the **Inspector**.

- Pre (Filters/Gain/Phase)
- Equalizers
- Channel Strip

You can assign an effect parameter either to the next empty slot or to a specific Quick Control slot.

NOTE

These options are only available for VST 3 plug-ins that support this function.

PROCEDURE

- Right-click the parameter.
 - To assign the parameter to the next empty slot, select **Add "x" to Quick Controls** (where x is the name of the parameter).
 - To assign the parameter to a specific slot, select **Add "x" to Quick Controls Slot** (where x is the name of the parameter). Then select the slot from the submenu.
-

RELATED LINKS

[Track Quick Controls](#) on page 616

Device Panels

You can display device panels, for example, for external MIDI devices, audio track panels, or VST insert effect panels.

NOTE

This channel rack is only available in the **MixConsole** window.

For information on how to create or import MIDI device panels, see the separate PDF document **MIDI Devices**.

RELATED LINKS

[About Device panels \(Cubase Pro only\)](#) on page 657

Adding Notes to a MixConsole Channel

PROCEDURE

1. Position the mouse pointer at the top edge of the **MixConsole**, and activate **Notepad**.
The **Notepad** section is shown above the fader section.
 2. Select the channel for which you want to add notes, click in the notepad section and type in your notes.
 3. To close the notepad, press **Esc**, or click in another section of the **MixConsole**.
-

Keyboard Focus in the MixConsole

The channel selector section, the channel rack section, and the fader section can be controlled with the computer keyboard.

For this to work, the section must have the focus. If a section has the keyboard focus, the border that surrounds it is highlighted in a specific color.

Activating Keyboard Focus

PROCEDURE

1. Click in an empty area of the section to activate the keyboard focus.
 2. Press **Tab** to activate the next section. This allows you to cycle forward through the sections.
 3. Press **Shift-Tab** to activate the previous section.
-

Navigating in a Section

Once you have activated the focus for a section, you can control it with the computer keyboard as described below. In the channel racks section and in the fader section, controls that are selected for keyboard control are indicated by a red border.

- To navigate through the controls, use the **Up Arrow**, **Down Arrow**, **Left Arrow**, **Right Arrow** keys.
- To activate or deactivate a switch, press **Return**.
- To expand or collapse an active rack, to open or close a value field in a slot, or to open the plug-in panel for a loaded plug-in, press **Return**.
- To access the controls in the left zone, press **Ctrl/Cmd-Return**.
- To access the controls in the middle zone, press **Return**.
- To access the controls in the right zone, press **Alt-Return**.
- To close a pop-up menu or a plug-in panel, press **Esc**.
- To enable or disable the loaded plug-in, press **Ctrl/Cmd-Alt-Return**.

VCA Faders (Cubase Pro only)

VCA faders serve as remote controls for groups of channel faders in the **MixConsole**.

VCA stands for Voltage-Controlled Amplifier. VCA faders were originally found on hardware mixing desks. They allowed the user to control the volume levels of several mixer channels with only one fader. To assign channel faders to a VCA fader, the respective channels must be physically connected with the VCA fader.

In Cubase, the VCA fader function is based on the same concept. VCA faders are assigned to a group of linked channels, a link group. The VCA faders control the following parameters of the link group: volume, mute, solo, listen, monitor, and record.

When you assign VCA faders, they become part of the link group.

IMPORTANT

If a VCA fader controls a link group, it cannot control another link group. If you assign a VCA fader to another group, the VCA fader is automatically removed from the former group.

You can create several VCA faders without assigning them to link groups straight away.

From a technical perspective, moving a VCA fader to a different dB level adds or subtracts the new value to or from the original values of the channels in the link group.

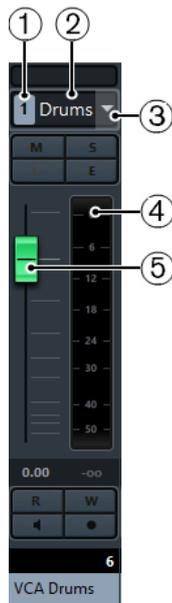
EXAMPLE

A channel in a link group has a level of -6 dB, the VCA fader is at the 0 position. If you move the VCA fader to a level of +3 dB, this value is added to the level of the linked channel. The linked channel now has a level of -3 dB.

VCA Fader Settings

VCA fader channels are different from the default fader channels.

Instead of the panner, the VCA faders display the link group to which they are assigned. The VCA faders also provide a pop-up menu that allows you to change the VCA fader settings.



1. Link group number
2. Link group name
3. VCA fader pop-up menu
4. Peak meter that displays the summed up level of all channel meters in the link group
5. Fader cap

The VCA fader pop-up menu provides the following options:

Edit Link Group Settings

Allows you to change the link group settings.

VCA Fader Controls Link Group: <link group name>

Shows the link group that the VCA fader controls. You can assign the VCA fader to a different link group. This removes the VCA fader from the current group. You can also remove the VCA fader assignment altogether. In this case, select **None**. In all cases, you must specify if you want the linked channels to revert to their original automation.

Combine Automation of VCA and Linked Channels

Combines the automation curves of VCA fader and linked channels in the **Project** window. This has the effect that the original automation curves of the linked channels are no longer used. In the **Project** window, the automation of the VCA fader is reset to the static value line. In the **MixConsole**, the VCA fader is reset to the 0 position.

Linked Channels

Shows which channels are linked in the link group.

RELATED LINKS

[VCA Fader Automation](#) on page 349

[Link Group Settings \(Cubase Pro only\)](#) on page 310

Creating VCA Faders

You can create VCA faders in several ways.

VCA faders can be created in the **MixConsole** and in the **Project** window.

In the **MixConsole**, you have the following options:

- You can create unassigned VCA faders in the fader section. They are placed at the right end of the fader section in front of the output channels and display no fader cap. The VCA faders can be assigned to link groups at a later stage. To create unassigned VCA faders in the **MixConsole**, right-click in the fader section and select **Add VCA Fader**.
- You can create VCA faders while creating link groups. The VCA faders are automatically added to the right of the link groups.

In the **Project** window, you can create VCA fader tracks in the track list. The VCA faders are placed in a **VCA Tracks** folder at the end of the track list. The VCA faders can be assigned to link groups in the **MixConsole** at a later stage.

NOTE

You can delete VCA faders only in the **Project** window.

RELATED LINKS

[VCA Fader Track \(Cubase Pro only\)](#) on page 151

Creating VCA Faders for a Selection of Channels

You can select several channels and automatically connect the channels to a new link group, create a VCA fader, and assign the VCA fader to this link group.

PROCEDURE

1. Select several channels in the **MixConsole**.
 2. Right-click one of the selected channels.
 3. In the context menu, select **Add VCA Fader to Selected Channels**.
-

RESULT

The channels are linked in a link group. A VCA fader is created, placed to the right of the selected faders, and assigned to the link group. In the **Project** window, the VCA track is placed below the selected tracks.

NOTE

If a VCA fader is created for a selection of channels, the **Selection** option is deactivated for the link group by default. You can change this setting in the **Link Group Settings** dialog.

RELATED LINKS

[Linking Channels](#) on page 310

[Changing the Link Group Settings \(Cubase Pro only\)](#) on page 312

[Link Group Settings \(Cubase Pro only\)](#) on page 310

Assigning VCA Faders to Link Groups

You can link channels and assign VCA faders to control them.

PREREQUISITE

You have selected channels.

PROCEDURE

1. Click **Link** on the **MixConsole** toolbar.
 2. In the **Link Group Settings** dialog, click in the **Name** field to enter a name for the link group.
 3. Activate **Use VCA Fader**.
The **Volume** parameter is automatically deactivated.
 4. Specify if you want to create a new VCA fader or select an existing VCA fader from the pop-up menu.
 5. Click **OK**.
-

RESULT

The channels are now linked to the VCA fader. At the top of the fader section, the display line shows the number and the name of the link group. The VCA fader also displays the link group name.

NOTE

- If you want to assign the VCA fader to a different link group, you can open the pop-up menu of the VCA fader, select **VCA Fader Controls Link Group: <name of group>**, and select a different group from the list of available link groups.
 - If you want to add a VCA fader quickly, select **Add VCA Fader to Selected Channels**. This automatically creates a VCA fader with a default name.
-

RELATED LINKS

[Link Group Settings \(Cubase Pro only\)](#) on page 310

Removing VCA Faders from Link Groups

You can remove VCA faders from link groups.

PREREQUISITE

You have selected the VCA fader that you want to remove.

PROCEDURE

1. Click **Edit Link Group Settings** on the **MixConsole** toolbar.
 2. In the **Link Group Settings** dialog, deactivate **Use VCA Fader**.
The **Volume** parameter is automatically reactivated.
 3. Click **OK**.
 4. Specify if the channels in the link group keep the combined automation.
-

RESULT

The VCA fader is removed from the link group and is deleted from the list of channels.

NOTE

You can keep the VCA fader in the fader section. In this case, open the VCA fader pop-up menu, select **VCA Fader Controls Link Group: <name of group>**, and select **None**. This removes only the VCA fader assignment.

RELATED LINKS

[Link Group Settings \(Cubase Pro only\)](#) on page 310

Nested VCA Faders

VCA faders can control other VCA faders.

If you use several VCA faders that control different link groups, you can create another VCA fader that controls the VCA faders. This allows you to control the volume level of several link groups at the same time.

Technically, a VCA fader that controls other VCA faders affects the volume level of all VCA faders and linked channels.

EXAMPLE

A VCA fader (main fader) controls a nested VCA fader that has been set to -10 dB. The latter VCA fader controls a linked channel that had an original level of -3 dB and that is set to -13 dB. If you change the main fader level from 0 to +4 dB, the controlled VCA fader is set to a level of -6 dB, and the linked channel is set to a level of -9 dB.

VCA Fader Automation

VCA fader automation influences the automation of link groups.

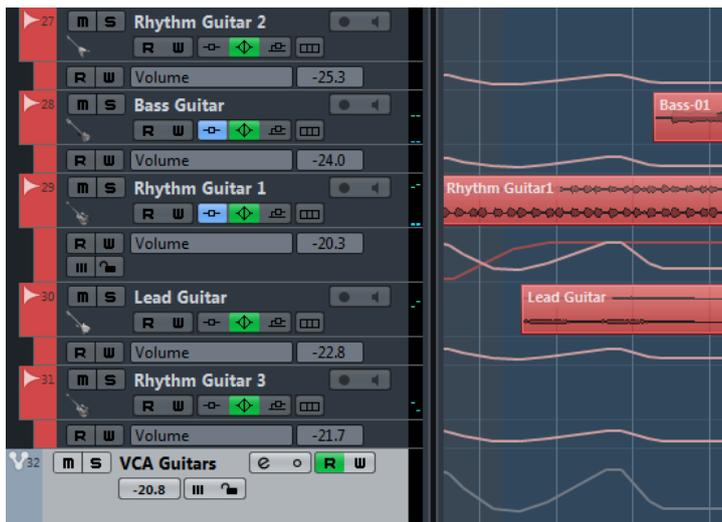
When you create VCA faders, their tracks in the **Project** window contain the static value line that is default for all automation tracks and that turns into an automation curve once you start writing automation.

Whenever you write automation for a VCA fader of a link group, it affects the volume automation of the linked channels. This has different effects:

- If a linked channel has no automation, the VCA fader automation curve is automatically added to the automation tracks of the linked channels. The automation tracks of the linked channels show the automation that is applied through the VCA fader.
 - If a linked channel has volume automation, the VCA fader automation modifies the existing volume automation of the linked channel. The VCA fader automation and the linked channel automation are combined. The automation tracks show the original automation and the combined automation of VCA fader and linked channels.
-

EXAMPLE

The VCA fader track automation affects all channels in a link group.



For the channels, the original automation is adjusted by the volume level of the VCA fader track.

EXAMPLE

The VCA fader track automation affects an existing volume automation of an audio track.



Automation of an audio track

The lighter static value line displays the VCA fader automation that has not been written yet.



VCA fader track automation

The VCA fader track has a different automation curve that affects the automation of the audio track.

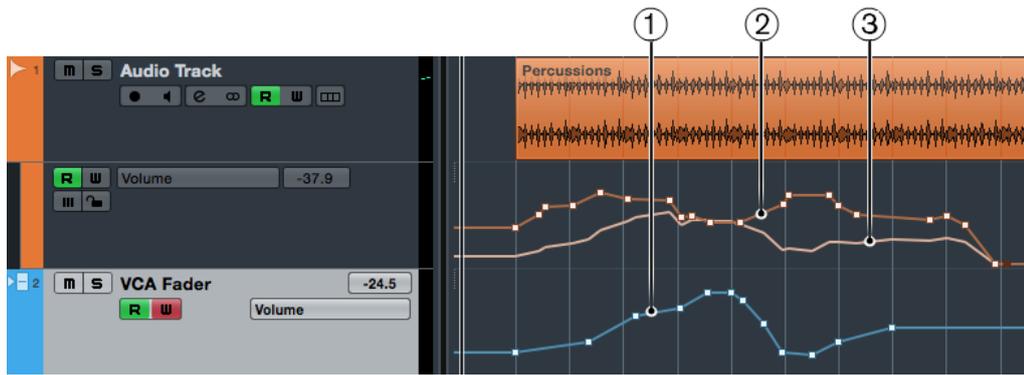


Original audio track automation and combined automation of VCA fader and audio track

The underlying darker automation curve displays the original automation of the audio track. The overlaying lighter automation curve displays the combined automation.

EXAMPLE

The following illustration shows how the VCA fader automation affects the automation of the connected channels.



1. Automation curve of the VCA fader
2. Automation curve of the connected channel
3. Combined automation of VCA fader and connected channel. This is what you hear.

RELATED LINKS

[VCA Fader Settings](#) on page 345

Control Room (Cubase Pro only)

The Control Room allows you to divide the studio environment into the performing area (studio) and the engineer/producer area (control room).

To open the **Control Room Mixer** you have the following options:

- To open the **Control Room** in a separate window, select **Devices > Control Room Mixer**.
- To open the **Control Room** section in the **MixConsole** window, click **Show/Hide Right Zone** .

NOTE

The **Control Room** is not available in the lower zone **MixConsole**.

The **Control Room Mixer** is divided into 2 sections.

- To open a section, click the tab at the bottom of the mixer.

The **Mixer** tab contains all controls that you use regularly during recording, mixing, and mastering, for example.

The **Setup** tab contains settings that you most probably use only once for a project.

Adding Channels to the Control Room

To be able to use the Control Room, you must add the channels that you need first.

PROCEDURE

1. Select **Devices > VST Connections**.
2. Click **Studio**.
3. Click **Add Channel**.
A pop-up menu lists all available channel types and shows how many instances of each type are available.
4. Select a channel type.
For most channel types, a dialog opens that allows you to choose the channel configuration.
5. Click the **Audio Device** column to set an audio device for the channel type.
6. Click the **Device Port** column to assign a port for the channel.

IMPORTANT

You cannot assign the same device port to a bus or channel and a Control Room channel at the same time.

RESULT

The Control Room functions are available for use. If you disable the Control Room, the configuration is saved and will be restored when you reenables the Control Room.

Output Routing

For the Control Room to function correctly, you must assign the Main Mix bus to the set of outputs that contains the mix that you want to hear.

If you only have one output bus, it automatically becomes the Main Mix. All other outputs are not routed through the Control Room Mixer.

Exclusive Assignment of Monitor Channels

Generally, the port assignment to the Control Room channels is exclusive. However, it can be useful to create monitor channels that share device ports with each other as well as inputs and outputs. This can be helpful if you use the same speakers as a stereo pair and also as the left and right channels of a surround speaker configuration, for example.

Switching between monitors that share device ports is seamless, multi-channel audio is mixed down to stereo as needed. Only one monitor set can be active at a time.

If your scenario does not require you to assign ports to several monitor channels, it is recommended to activate the **Exclusive Device Ports for Monitor Channels** option (**File > Preferences > VST > Control Room**). This way, you make sure that you do not accidentally assign ports to inputs/outputs and monitor channels at the same time.

IMPORTANT

The state of the **Exclusive Device Ports for Monitor Channels** preference is saved together with the Control Room presets. Therefore, if you recall a preset, your current setting in the **Preferences** dialog might be overwritten.

Control Room Channels

Each Control Room channel type that you create defines an input or output of the **Control Room Mixer**.

Monitor Channels

A monitor channel represents a set of outputs that are connected to monitor speakers in the Control Room.

You can create up to 4 monitor channels for a mono, stereo, or surround speaker configuration. Each monitor can have its own custom downmix settings, input gain, and input phase settings.

NOTE

Monitor channels can share hardware inputs or outputs with another bus or channel. When you create the connections for the monitor channels, device ports that are already used for other busses or channels are shown in red on the **Device Port** pop-up menu. If you select a used port, its previous connection is lost.

Phones Channel

You can use the phones channel in the Control Room to listen to cue mixes.

You can create 1 phones channel for a stereo configuration. It allows you to listen to the main mix or cue mixes or to external inputs on a pair of headphones. You can also use it for previewing.

Cue Channels

You can use cue channels for sending cue mixes, also known as headphone mixes, to performers in the studio during recording.

You can create up to 4 cue channels in mono or stereo for 4 discrete cue mixes. Cue channels have talkback and click functions. They allow you to monitor the main mix, external inputs, or a dedicated cue mix.

EXAMPLE

If you have 2 available headphone amplifiers for performers, you can create 1 cue channel for each cue mix and name them according to their function: vocalist mix, bass player mix, etc.

Cue Channels and Cue Sends

For every cue channel that you define in the **VST Connections** window, each channel in the **MixConsole** has a cue send with level, pan, and pre/post-fader selection. These cue sends can be used to create discrete cue mixes that performers can listen to.

- To show the cue sends, open the **MixConsole**, and activate **Racks > Cue Sends**.

External Inputs

You can use external inputs for monitoring external devices, such as CD players, multi-channel recorders, or any other audio source.

You can create up to 6 external inputs for a mono, stereo, or surround speaker configuration.

NOTE

If you select external inputs as input source of an audio channel, you can record them. In this case, you do not need to assign the device ports to the input channel.

Talkback Channels

You can use talkback channels for communication between the Control Room and performers in the studio.

You can create 1 talkback channel and assign a mono input channel to each one of them.

You can also use talkback channels as input source for audio tracks and record them. You can route them to each cue channel and use different levels.

You can insert effects like a compressor or limiter on talkback channels. This ensures that erratic levels do not disturb performers and that clear communication with everyone is possible.

NOTE

The **Auto Disable Talkback Mode** option (**File > Preferences > VST > Control Room**) allows you to specify how talkback works during playback and recording.

Control Room Mixer

The **Control Room Mixer** displays information and controls for the channels that you define on the **Studio** tab in the **VST Connections** window.

The **Control Room Mixer** is divided into a number of sections that you open by clicking their header. To open several sections simultaneously, use **Ctrl/Cmd-click**.



External

The **External** section allows you to use external inputs for monitoring external devices. It is only shown if you have added more than one external input in the **VST Connections** window.



To switch to another external input, click the input name and select a new external input from the pop-up menu.

Cue Channel

The **Cue Channel** section allows you to set up cue channels for sending cue mixes.

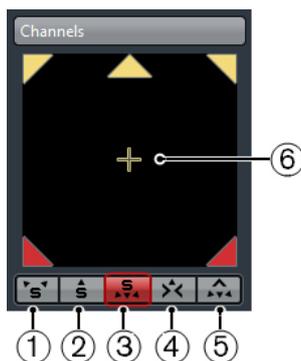


- 1. Activate Cue Channel**
Allows you to activate/deactivate the cue channel.
- 2. Source Selectors**
Allow you to select the source for the cue channel: monitor mix (**Mix**), external inputs (**Ext**), or the cue sends (**Cues**). The signal presence indicators in the upper left corner light up when the source channel is sending data to the cue channel.
- 3. Enable Talkback to Cue Channel**
Allows you to activate talkback for communication between the Control Room and the performers in the studio. You can set the level of the talkback signal with the slider.
- 4. Activate Metronome Click**
Activates the metronome click. Use the **Click Level** and **Click Pan** controls to set the volume and the pan position of the metronome click.
- 5. Signal Level**
Allows you to set the signal level.

Channels

The **Channels** section shows the speaker arrangement of the Main Mix bus.

You can use the solo functions to listen to individual channels of the Main Mix. You can also use this to test your multi-channel speaker system and make sure that the correct channels are routed to the speakers.



- 1. Solo Left and Right Channels**
Allows you to solo the left and right channels.
- 2. Solo Front Channels**
Allows you to solo the front channels.
- 3. Solo Surround Channels**
Allows you to solo the surround channels.
- 4. Listen to Solo Channels on Center Channel**

Allows you to listen to all soloed speakers in the center channel. If the center channel is not available, the channels are distributed equally to the left and right.

5. Listen to Surround Channels on Front Channels

Allows you to solo the surround channels and route them to the front speakers.

6. Solo LFE Channel

Allows you to solo the LFE channel.

Monitors

The **Monitors** section allows you to select and configure the monitor sets.



Downmix Presets

The **Downmix Presets** section allows you to configure downmix presets.



1. Assign Downmix Preset

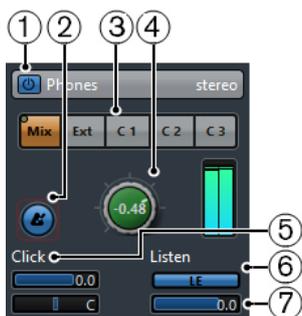
Allows you to configure a downmix preset for the monitor that is selected in the **Monitors** section.

2. Select Output Configuration

Allows you to select an output channel configuration. You can also select **Open MixConvert** to open the MixConvert plug-in.

Phones

The **Phones** section allows you to use the phones channel in the Control Room to listen to cue mixes.



- 1. Activate Phones Channel**
Allows you to activate/deactivate the phones channel.
- 2. Activate Metronome Click**
Activates the metronome click.
- 3. Source Selectors**
Allow you to select the source for the phones channel: monitor mix (**Mix**), external inputs (**Ext**), or the cue sends (**Cues**). The signal presence indicators in the upper left corner light up when the source channel is sending data to the Phones channel.
- 4. Phones Level**
Allows you to set the phones level. **Ctrl/Cmd**-click to set the level to the reference level specified in the **Preferences** dialog (**VST-Control Room page**).
- 5. Click Level and Click Panning**
Use the **Click Level** and **Click Panning** controls to set the volume and the pan position of the metronome click.
- 6. Enable Listen for Output**
Enables the listen bus function.
- 7. Listen Level**
Allows you to set the listen level.

Control Room Channel

The Control Room channel is the representation of the bus that is set up as the Main Mix bus on the **Outputs** tab in the **VST Connections** window.



The following section contains a description of the individual controls.



- 1. Activate Control Room Channel**
Allows you to activate/deactivate the Control Room channel.
- 2. Signal Level**

Allows you to set the volume for the Control Room output. This does not affect the recording input level or the Main Mix level for exporting mixdowns. **Ctrl/Cmd**-click to set the level to the reference level specified in the **Preferences** dialog (**VST-Control Room** page).

3. Signal Meter

Shows the volume for the Control Room output.



1. Source Selectors

Allow you to select the source for the Control Room channel. The available sources depend on the channels that you added to the Control Room. The signal presence indicators in the upper left corner light up when the source channel is sending data to the Control Room channel.

2. Dim Signal

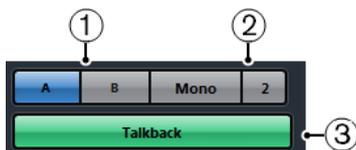
Activate this to lower the Control Room level by a fixed amount. This allows a quick reduction in monitor volume without disturbing the current monitor level. Clicking **DIM** again returns the monitor level to the previous setting.

3. Use Reference Level

Enable this button to set the Control Room level to the reference level specified in the **Preferences** dialog (**VST-Control Room** page). The reference level is the level that is used in calibrated mixing environments, such as film dubbing stages.

4. Activate Metronome Click

Activates the metronome click.



1. Monitor Selectors

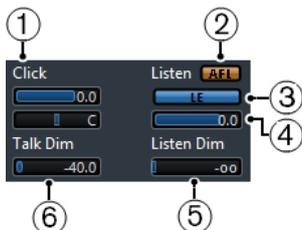
Allow you to select another monitor source.

2. Downmix Preset Selectors

Allow you to select another downmix preset.

3. Activate Talkback

Allows you to activate talkback for communication between the Control Room and the performers in the studio. Click to activate, click and hold for momentary mode.



1. Click Level and Click Pan

Use the **Click Level** and **Click Pan** controls to set the volume and the pan position of the metronome click for the Control Room channel.

2. AFL/PFL

Allows you to determine whether the signal of a listen-enabled channel is routed to the Control Room channel after applying the fader and pan settings (AFL) or before applying the fader and pan settings (PFL).

3. Enable Listen for Output

Enables the listen bus function for the Control Room output.

4. Listen Level

Allows you to adjust the volume of listen bus signals that are routed to the Control Room output.

5. Listen Dim

Allows you to adjust the volume of the Main Mix when channels are in listen mode. This keeps listen-enabled channels in context with the Main Mix. If the **Listen DIM** level is set to the minimum value, you only hear the listen-enabled channels.

6. Talk Dim

When **Talkback** is active, this slider controls how much the output of all the channels in the Control Room Mixer is reduced, to prevent unwanted feedback.

Control Room Setup

The **Control Room** setup contains additional settings for the channels.

- To open the **Control Room** setup, click the **Setup** tab at the bottom right of the Control Room.

The **Control Room** setup is divided into a number of sections that you open by clicking their headers.



Input Gain



Setting up the input gain can be useful in the following situations:

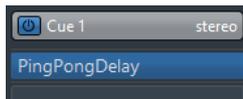
- To balance the level of external inputs, for example, CD players and other sources to the Main Mix level, for A/B comparisons.
- To balance the level of your monitor systems, so that switching between sets of speakers does not change the playback volume.

Input Phase



Reversing the input phase can be useful for external inputs and monitor speaker outputs.

Insert Effects



Each Control Room channel has a set of insert effect slots.

- Use the inserts on the Control Room channel for metering and spectral analysis plug-ins. All solos including the Listen bus will come through the Control Room channel and allow analysis of individual sounds. A brickwall limiter in the last insert slot of the Control Room channel can prevent accidental overloads and damage to speaker systems.
- Use the inserts for the talkback channel to control the dynamics of the talkback microphone. This helps protect performers' hearing and ensures that everyone can be heard over the talkback microphone.
- Use the monitor inserts for surround decoding or brickwall limiting to protect sensitive monitor speakers. Each monitor channel has a set of eight inserts, all of which are post Control Room fader.

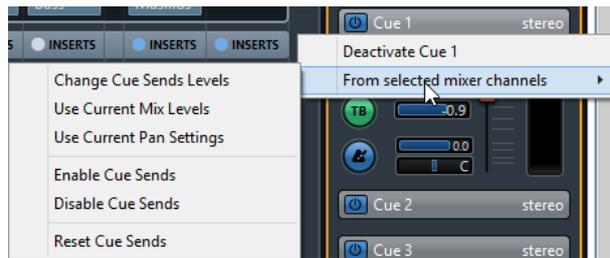
Setting Up a Cue Mix

You can create a cue mix from the fader and pan levels that are used in the **MixConsole** and change them to meet the needs of the individual performers.

PROCEDURE

1. In the **MixConsole**, select the channels from which you want to copy the settings.
2. In the **Control Room**, do one of the following:
 - To apply the function only to this cue channel, right-click on a cue channel to open the context menu.
 - To apply the function to all cue channels, click anywhere but on a cue channel to open the context menu.

3. Select **From selected mixer channels** and select one of the functions.



Cue Mix Context Menu

Change Cue Sends Levels

Allows you to adjust multiple send levels at the same time.

Use Current Mix Levels

Allows you to copy the fader levels of the selected tracks to the cue sends. This sets all cue send levels for the selected tracks to the level of the main channel fader. It also changes the cue send status to pre-fader, so that changes in the main mix do not affect the cue sends.

Use Current Pan Settings

Allows you to copy pan information from the main mix to the cue sends of the selected tracks. If the cue send is mono, the pan setting is copied, but the output of the cue send is the sum of the left and right channels.

Enable Cue Sends

Allows you to activate the cue sends of the selected channels. To be able to hear the cue mix for a cue channel, the cue sends must be enabled.

Disable Cue Sends

Allows you to disable the cue sends of the selected channels.

Reset Cue Sends

Allows you to deactivate the cue sends, to change the send level of all selected channels to 0 dB, and to set the signal source to post-fader. This way, any changes to the main mix also change the cue mix. To raise the level of individual cue channels, raise the level on that channel.

Adjusting the Overall Cue Send Level

You can adjust multiple send levels at the same time for the cue send mix, keeping the blend intact while lowering the overall volume. This is sometimes necessary, because the levels in the main mix are often optimized for the loudest possible signal level without clipping.

This means that when you create a “more me” mix, you may find that there is not enough headroom available in the cue send to raise levels without introducing clipping.

PROCEDURE

1. In the **MixConsole**, select the channels that you want to modify.
2. In the **Control Room**, right-click a cue channel to open the context menu.
3. Select **From selected mixer channels** > **Change Cue Sends Levels**.
4. Activate **Relative Mode**.

This way, you adjust the existing levels. By deactivating **Relative Mode**, all cue sends are set to the same absolute level.

5. Adjust the level as necessary.
The level of all selected cue sends is adjusted by the set amount.
 6. Click **OK**.
-

Metering and Loudness (Cubase Pro only)

Cubase provides a master meter that works as a multi-channel true peak meter, and a loudness meter that allows you to measure the loudness in compliance with the loudness recommendation R 128 of the European Broadcasting Union (EBU).

Metering

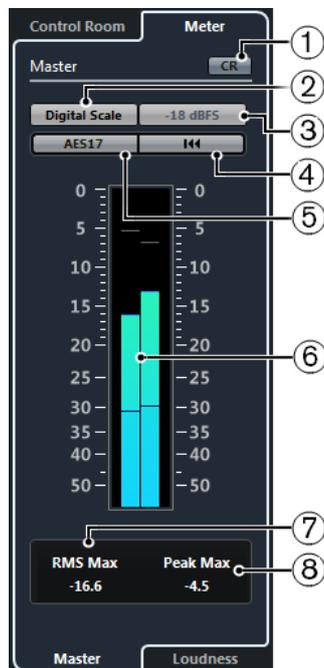
Cubase provides a master meter and a loudness meter that can be shown to the right of the fader section in the **MixConsole** window or in a separate window in the **Control Room Mixer**.

NOTE

The master meter is not available in the lower zone **MixConsole**.

Master Meter

The master meter is a multi-channel true peak meter.



1. Control Room view

Activates the **Control Room** section in the **MixConsole**.

2. Scales

Lets you select a scale according to different broadcast standards (Digital, DIN, EBU, British, Nordic, K-20, K-14, or K-12). The headroom is indicated by red lines in the meter scale.

3. Alignment level standards

Lets you select an alignment level (offset) for your scale. This is unavailable for digital and K-System scales. The broadcast meter scales DIN, EBU, Nordic, and British have a default alignment level of -18 dBFS.

4. Reset RMS and PPM Max

Resets the measurement.

5. AES17 standard

Activates the AES17 standard that adds an offset of 3 dB to the RMS value.

6. RMS/Peak meter

Shows the RMS and peak hold values as blue lines and the peak values as gray lines.

7. RMS Max

Shows the maximum RMS value.

8. Peak Max

Shows the maximum peak value.

RELATED LINKS

[Control Room \(Cubase Pro only\)](#) on page 352

Displaying Meters

PROCEDURE

1. In the **MixConsole**, click **Show/Hide Right Zone** to show the right zone with the **Control Room/Meter**.
 2. Click the **Meter** tab at the top of the **Control Room/Meter** section.
By default, the master meter is displayed.
-

Loudness Measurement

Loudness measurements that correspond to the recommendation R 128 from the European Broadcasting Union (EBU) consider loudness, loudness range, and maximum true peak level values.

Loudness Measurement

The following measurements are performed:

- **Integrated Loudness**
Average loudness that is measured over the whole track in LUFS (Loudness Unit, referenced to Full Scale).
According to the loudness recommendation R 128, audio should be normalized at -23 LUFS (± 1 LU).
- **Short-Term Loudness**
Loudness that is measured every second on an audio block of 3 seconds. This gives information about the loudest audio passages.
- **Momentary Loudness**
Maximum value of all momentary loudness values that are measured every 100 ms in an audio range of 400 ms.

Loudness Range

The loudness range measures the dynamic range over the whole title in LU (Loudness Units). It reports the ratio between the loudest and the quietest non-silent sections. The audio is divided into small blocks. Every second there is one audio block, and each block lasts 3 seconds so that the analyzed blocks overlap.

The top 10 % of the quiet blocks and the top 5 % of the loud blocks are excluded from the final analysis. The calculated loudness range is the ratio between the loudest and quietest remaining audio blocks. This measurement helps you to decide if and how much compression or expansion you can or should apply to the audio.

True Peaks

When a digital signal is converted to an analog signal, EBU R 128 recommends that you rather measure an estimation of the real peaks instead of relying on digital peaks. This avoids clipping and distortion.

Naming and Units

The EBU R 128 proposes the following naming and units conventions:

- A relative measurement, such as a value that is relative to a reference level, LU as Loudness Unit (1 LU is 1 dB).
- An absolute measurement, LUFS as loudness unit referenced to full scale. 1 LUFS can be understood as 1 dB in the AES-17 scaling.

Scales

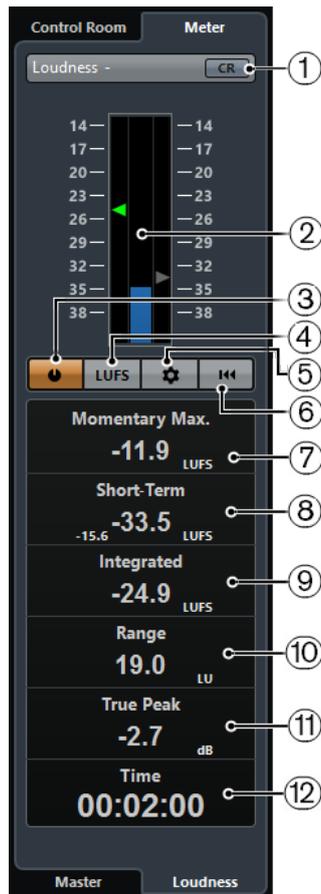
The loudness meter offers two different scales:

- The EBU +9 scale has a range from -18.0 LU to +9.0 LU (-41.0 LUFS to -14.0 LUFS).
- The EBU +18 scale has a range from -36.0 LU to +18 LU (-59.0 LUFS to -5.0 LUFS).

Loudness Meter

The **Loudness** meter allows you to analyze, measure, and monitor the loudness of your project in real-time during playback or mixing.

- To open the loudness meter, select the **Loudness** tab at the bottom of the meter display in the **MixConsole** or in the **Control Room Mixer**.



- 1. Control Room view**
Activates the **Control Room** section.
- 2. Loudness meter**
Shows the **Integrated** value as a triangle in the left meter scale and the **Short-Term** value as a triangle in the right meter scale.
- 3. Measure Loudness**
Activates the loudness measurement.
- 4. Switch between LU and LUFS**
Switches the meter scale between LUFS (absolute values) and LU (relative values).
- 5. Configure Loudness Settings**
Lets you specify a threshold value for the **Momentary Max**, the **Short-Term**, the **Integrated**, and the **True Peak** clipping indicators. If values above the set thresholds are detected, the corresponding indicators turn red.
You can switch the loudness meter between the EBU +9 scale and the EBU +18 scale.
To reset all values on playback start, activate the **Reset on Start** option.
- 6. Reset Loudness**
Resets all loudness values.
- 7. Momentary Max**
Shows the maximum loudness measured over a duration of 400 ms.
- 8. Short-Term**
Shows the loudness measured over a duration of 3 s.
- 9. Integrated**

Shows the average loudness measured from start to stop. The period of measurement is shown in the **Time** display. The recommended value for the integrated loudness is -23 LUFS. This absolute value is the reference point for the relative LU scale where -23 LUFS equals 0 LU.

10. Range

Shows the dynamic range of the audio measured from start to stop. This value helps you to decide how much dynamic compression you can apply. The range that is recommended for highly dynamic audio such as film music is 20 LU.

11. True Peak

Shows the true peak level of the audio. The maximum permitted true peak level in production is -1 dB.

12. Time

Shows the duration of the integrated loudness measurement.

RELATED LINKS

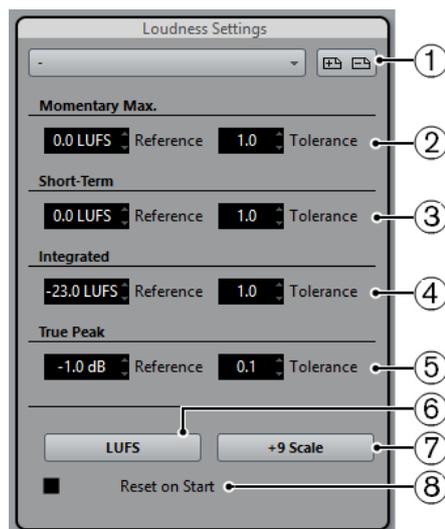
[Displaying Meters](#) on page 366

[Control Room \(Cubase Pro only\)](#) on page 352

[Metering and Loudness \(Cubase Pro only\)](#) on page 365

Loudness Settings

- To open the **Loudness Settings** dialog, select **Devices > Control Room Mixer > Meter > Loudness > Configure Loudness Settings**.



The following parameters are available:

1. Select Preset

Allows you to create, load, and remove loudness presets.

2. Momentary Max

Allows you to specify a reference value and a tolerance value for the maximum momentary loudness. If higher values are detected, the clipping indicator in the loudness meter turns red.

3. Short-Term

Allows you to specify a reference value and a tolerance value for the short-term loudness. If higher values are detected, the clipping indicator in the loudness meter turns red.

4. Integrated

Allows you to specify a reference value and a tolerance value for the integrated loudness. If higher values are detected, the clipping indicator in the loudness meter turns red.

5. True Peak

Allows you to specify a reference value and a tolerance value for the true peak level. If higher values are detected, the clipping indicator in the loudness meter turns red.

6. Switch between LU and LUFS

Allows you to switch the meter scale between LUFS (absolute values) and LU (relative values).

7. Switch between EBU +9 Scale and EBU +18 Scale

Allows you to switch the meter between the EBU +9 scale and the EBU +18 scale.

8. Reset on Start

Activate this option to reset all values on playback start.

Audio Effects

Cubase comes with a number of effect plug-ins included that you can use to process audio, group, instrument, and ReWire channels.

This chapter contains general details about how to assign, use, and organize effect plug-ins. The effects and their parameters are described in the separate PDF document **Plug-in Reference**.

Insert Effects and Send Effects

You can apply effects to audio channels by using insert effects or send effects.

NOTE

If you want to apply audio effects to individual audio events, use offline processing instead (Cubase Pro only).

Insert Effects

Insert effects are inserted in the signal chain of an audio channel. This way, the whole channel signal passes through the effect.

You can add up to 8 different insert effects per channel.

Use insert effects in the following cases:

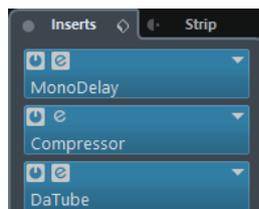
- If you do not need to mix dry and wet sound.
This is the case for distortion, filters or other effects that change the tonal or dynamic characteristics of the sound.

To add and edit insert effects, you can use the following inserts sections:

- The **Inserts** rack in the **MixConsole**.



- The **Inserts** section in the **Channel Settings** window.



- The **Inserts** section in the **Inspector**.



Send Effects

Send effects can be added to FX channel tracks, and the audio data to be processed can be routed to the effect. This way, the send effects remain outside the audio channel's signal path.

Each audio channel has 8 sends, each of which can be freely routed to an effect (or to a chain of effects).

Use send effects in the following cases:

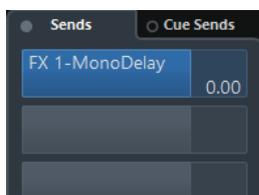
- To control the balance between the dry and wet sound individually for each channel.
- To use the same effect for several different audio channels.

To edit send effects, you can use the following sends sections:

- The **Sends** rack in the **MixConsole**.



- The **Sends** section in the **Channel Settings** window.



- The **Sends** section in the **Inspector**.



VST Standard

Audio effects can be integrated in Cubase thanks to the VST standard. At the moment, the VST 3 and VST 2 standards are supported.

The VST 3 plug-in standard offers improvements like smart plug-in processing and side-chain inputs. Yet, it retains full backwards compatibility to VST 2.

Smart Plug-In Processing

Smart plug-in processing is a technology that allows to disengage the processing for plug-ins when no signal is present. This reduces the CPU load on silent passages, and allows you to load more effects.

To activate smart plug-in processing, select **File > Preferences** and on the **VST-Plug-ins** page, activate **Suspend VST 3 plug-in processing when no audio signals are received**.

NOTE

Check the processor for the passage with the largest number of events playing simultaneously to make sure that your system offers the required performance at every time position.

Side-Chain Inputs

Several VST 3 effects feature side-chain inputs. These allow you to control the operation of the effect via external signals that are routed to the side-chain input.

The effect processing is still applied to the main audio signal.

RELATED LINKS

[Side-Chain Input](#) on page 386

Plug-In Delay Compensation

Some audio effects, especially dynamics processors that feature a look-ahead functionality, may take a brief time to process the audio fed into it. As a result, the output audio will be slightly delayed. To compensate for this, Cubase provides plug-in delay compensation.

Plug-in delay compensation is featured throughout the entire audio path maintaining the sync and timing of all audio channels.

VST 3 dynamics plug-ins with look-ahead functionality feature a **Live** button that allows you to disengage the look-ahead. This minimizes latency during realtime recording. For details, see the separate PDF document **Plug-in Reference**.

To avoid latency during realtime recording or realtime playback of VST instruments, you can also use **Constrain Delay Compensation**.

RELATED LINKS

[Constrain Delay Compensation](#) on page 606

Tempo Sync

Plug-ins can receive timing and tempo information from Cubase. This is useful to synchronize plug-in parameters such as modulation rates or delay times to the project tempo.

Timing and tempo information is provided to plug-ins of the standard VST 2.0 or later.

To set up tempo sync you must specify a base note value. Straight, triplet or dotted note values (1/1 to 1/32) are supported.

For details about the included effects, see the separate PDF document **Plug-in Reference**.

Insert Effects

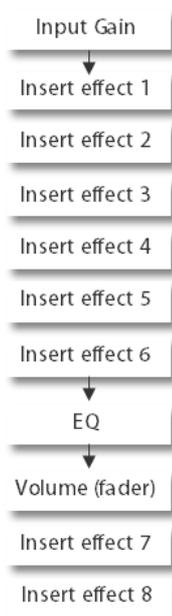
Insert effects can be inserted in the signal chain of an audio channel. This way, the whole channel signal passes through the effect.

You can add up to 8 different insert effects independently for each audio-related channel (audio track, group channel track, FX channel track, instrument channel or ReWire channel) or output bus.

NOTE

You can process mono audio tracks through stereo insert effects.

The signal passes through the insert effects from the top downwards:



The last 2 insert slots for any channel are post-EQ and post-fader.

NOTE

To show the post-fader slots 7 and 8 in the **MixConsole**, open the **Rack Settings** and activate **Fixed Number of Slots**.

Use post-fader slots for insert effects where you do not want the level to be changed after the effect. Dithering and maximizers are typically used as post-fader insert effects for output busses, for example.

NOTE

If you want to use the same effect with the same settings on several channels, set up a group channel and apply your effect as a single insert for this group.

RELATED LINKS

[Dither Effects](#) on page 388

[Moving Inserts to Post-Fader or Pre-Fader Position](#) on page 327

[Adding Insert Effects to Group Channels](#) on page 375

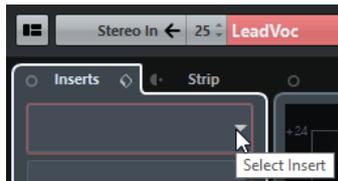
[Rack Settings](#) on page 309

Adding Insert Effects

If you add insert effects to audio channels, the audio is routed through the insert effects.

PROCEDURE

1. Select the audio track.
2. In the track list, click **Edit Channel Settings** .
The **Channel Settings** window for the audio channel opens.
3. In the **Inserts** section, click the first insert slot on the **Inserts** tab, and select an effect from the selector.



RESULT

The selected insert effect is loaded and activated, and the audio is routed through it. The effect control panel is opened.

RELATED LINKS

[Effect Control Panel](#) on page 389

Adding Insert Effects to Busses

If you add insert effects to input busses, the effects become a permanent part of the recorded audio file. If you add insert effects to output busses, all audio routed to that bus is affected. Insert effects that are added to output busses are sometimes referred to as master effects.

PROCEDURE

1. Select **Devices > MixConsole** to open the MixConsole.
2. In the fader section, perform one of the following actions:
 - Locate the input channel and click **Edit Channel Settings** to edit the input bus.
 - Locate the output channel and click **Edit Channel Settings** to edit the output bus.The **Channel Settings** window for the selected channel opens.
3. In the **Inserts** section, click the first insert slot on the **Inserts** tab, and select an effect from the selector.

RESULT

The selected insert effect is added to the bus and activated. The effect control panel is opened.

Adding Insert Effects to Group Channels

If you add insert effects to group channels you can process several audio tracks through the same effect.

PROCEDURE

1. Select **Project > Add Track > Group Channel** to add a group channel track.
2. In the **Inspector** for the group track, open the **Output Routing** pop-up menu and select the desired output bus.

3. In the **Inspector** for the group track, open the **Inserts** section.
 4. Click the first effect slot and select an effect from the selector.
 5. In the **Inspector** for the audio tracks, open the **Output Routing** pop-up menus and select the group.
-

RESULT

The signal from the audio track is routed through the group channel and passes through the insert effect.

Copying Insert Effects

You can add insert effects to audio channels by copying them from other audio channels or from other slots of the same audio channel.

PREREQUISITE

You have added at least one insert effect to an audio channel.

PROCEDURE

1. Select **Devices > MixConsole**.
 2. In the **Inserts** rack, locate the insert effect that you want to copy.
 3. Hold down **Alt**, drag the insert effect, and drop it on an insert slot.
-

RESULT

The insert effect is copied. If the destination slot already contains an insert effect, it is replaced.

Rearranging Insert Effects

You can change the position of an insert effect in the signal chain of the audio channel by moving it to a different slot of the same channel. You can also move an insert effect to another audio channel.

PREREQUISITE

You have added at least one insert effect to an audio channel.

PROCEDURE

1. Select **Devices > MixConsole**.
 2. In the **Inserts** rack, locate the insert effect that you want to rearrange.
 3. Drag the insert effect, and drop it on an insert slot.
-

RESULT

The insert effect is removed from the source slot and placed on the destination slot. If the destination slot already contains an insert effect, this effect is moved to the next insert slot.

Deactivating Insert Effects

If you want to listen to a track without having it processed by an effect, but do not want to remove this effect completely from the insert slot, you can deactivate it.

PREREQUISITE

You have added an insert effect to an audio channel.

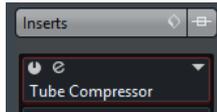
PROCEDURE

1. In the track list, select the audio track with the insert effect that you want to deactivate.
2. In the **Inspector**, open the **Inserts** section, and **Alt-click Bypass Insert**.



RESULT

The effect is deactivated and all processing is terminated, but the effect is still loaded.



Bypassing Insert Effects

If you want to listen to the track without having it processed by a particular effect, but do not want to remove this effect completely from the insert slot, you can bypass it. A bypassed effect is still processing in the background. This allows for crackle-free comparison of the original and the processed signal.

PREREQUISITE

You have added an insert effect to an audio channel.

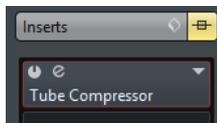
PROCEDURE

1. In the track list, select the audio track with the insert effect that you want to bypass.
2. In the **Inspector**, open the **Inserts** section, and click **Bypass Insert**.



RESULT

The effect is bypassed, but still processing in the background.



Removing Insert Effects

PROCEDURE

1. Select the audio track that contains the insert effect that you want to remove.
2. In the **Inspector**, click **Select Insert**.
3. In the effect selector, select **No Effect**.

RESULT

The insert effect is removed from the audio channel.

Freezing Insert Effects

Freezing an audio track and its insert effects allows you to reduce processor power. However, frozen tracks are locked for editing. You cannot edit, remove or add insert effects for the frozen track.

PREREQUISITE

You have made all settings for the track and you are sure that you do not need to edit it anymore.

PROCEDURE

1. In the **Inspector** for the audio track that you want to freeze, click **Freeze Audio Channel**.



2. In the **Freeze Channel Options** dialog, specify a **Tail Size** in seconds. This adds time at the end of the rendered file. This way, reverb and delay tails can fully fade out.

RESULT

The output of the track including all pre-fader insert effects is rendered to an audio file.

NOTE

Post-fader inserts can not be frozen.

The frozen audio track is saved in the **Freeze** folder that can be found in the following location:

- Windows: within the **Project** folder
- Mac OS: `User/Documents`

In the **MixConsole**, the frozen audio channel is indicated by a snow flake symbol above the channel name. You can still adjust the level and panning, make EQ settings and adjust the effect sends.

AFTER COMPLETING THIS TASK

To unfreeze a frozen track, click **Freeze** again.

Insert Effects in Multi-Channel Configurations (Cubase Pro only)

You can insert VST 2 and VST 3 effects on tracks with a multi-channel configuration. However, not all effect plug-ins support multi-channel processing.

Mono or stereo effects can only process 1 or 2 channels, whereas surround-capable plug-ins are applied to all speaker channels, or to a subset of these.

- To set up to what speaker channels the insert effect is applied, use the **Routing Editor**.

RELATED LINKS

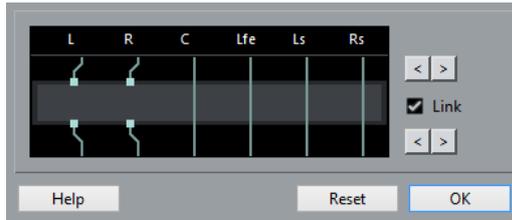
[Routing Editor](#) on page 379

Routing Insert Effects through Specific Audio Channels

If you insert a stereo insert effect on a multi channel track, the first speaker channels of the track are routed through the available effect channels. The other channels remain unprocessed. However, you can route the effect through different speaker channels.

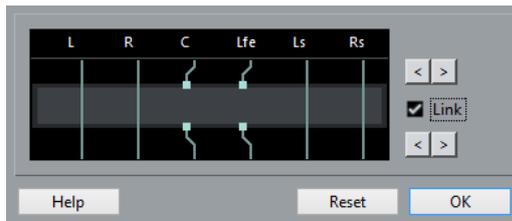
PROCEDURE

1. In the track list, click **Edit Channel Settings** to open the **Channel Settings** window for the track on which the effect is inserted.
2. On the **Inserts** section, click **Routing** to open the **Routing** tab.
3. Double-click the signal diagram for the insert effect to open the **Routing Editor**.



The first speaker channels of the track are routed through the available effect channels.

4. Optional: Activate **Link** to link the input and output channel assignment.
5. Click the arrow buttons to route different speaker channels through the effect.



RESULT

The effect is routed through different channels of the audio.

NOTE

To route a stereo plug-in through all 6 channels of a 5.1 track, add 3 instances of it and use different speaker channels for each instance.

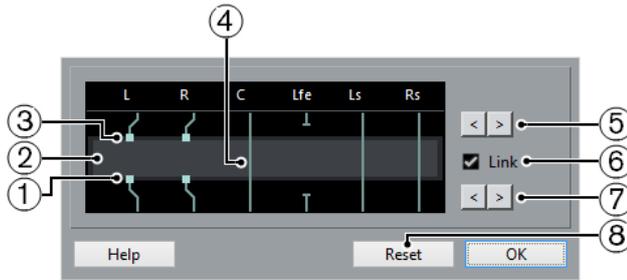
RELATED LINKS

[Routing Editor](#) on page 379

Routing Editor

The **Routing Editor** allows you to set up to what speaker channels the effect is applied to.

The **Routing Editor** shows the channels in the current configuration, with signals passing from top to bottom.



- 1. Outputs**
The lower squares represent the outputs from the effect plug-in.
- 2. Effect plug-in**
The field in the middle represents the effect plug-in.
- 3. Inputs**
The upper squares represent the inputs to the effect plug-in.
- 4. Connections**
The lines represent the connections.
- 5. Input channel assignment**
These buttons allow you to assign the input channels.
- 6. Link**
This button allows you to link the input and output channel assignment.
- 7. Output channel assignment**
These buttons allow you to assign the output channels.
- 8. Reset**
This button allows you to reset the original channel setup.

Routing Connections

In the Routing Editor you can set up the routing connections.

NOTE

You can only make settings in the **Routing Editor** if you route multi-channel audio through an effect that supports less channels.

The following connections are possible:

Routing Connection



The audio on the speaker channel is routed through the effect channel and processed by the effect.

Bypass Connection



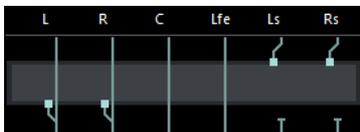
The audio on the speaker channel passes the effect without being processed.

Broken Connection



The audio on the speaker channel is not sent to the output.

Cross Connection



The audio on the specific channels is processed by the effect, and output on other channels.

In this example, the audio on the Ls-Rs channels is output on the L-R channels. Since the L-R channels are bypassed, the final L-R output contains both the original L-R signals and the processed Ls-Rs signals.

Send Effects

Send effects are outside the signal path of an audio channel. The Audio data that is to be processed must be sent to the effect.

- You can select an FX channel track as routing destination for a send.
- You can route different sends to different FX channels.
- You can control the amount of signal sent to the FX channel by adjusting the effect send level.

To do this, you must create FX channel tracks.

RELATED LINKS

[FX Channel Tracks](#) on page 381

FX Channel Tracks

You can use FX channel tracks as routing destinations for audio sends. The audio is sent to the FX channel and through any insert effects set up for it.

- You can add several insert effects to an FX channel.
The signal passes through the effects in series, from the top downward.
- You can rename FX channel tracks as any other tracks.
- You can add automation tracks to FX channel tracks.
This allows you for automating various effect parameters.
- You can route the effect return to any output bus.
- You can adjust the FX channel in the **MixConsole**.
This includes adjusting the effect return level, the balance, and the EQ.

When you add an FX channel track, you can select if FX channel tracks are created inside or outside a dedicated folder. If you select **Create Inside Folder**, FX channel tracks are shown in a dedicated folder.



This allows for better overview and editing of the FX channel tracks.

NOTE

By folding FX channel folders you can save screen space.

RELATED LINKS

[Adding FX Channel Tracks](#) on page 382

Adding FX Channel Tracks

PROCEDURE

1. Select **Project > Add Track > FX Channel**.
 2. Open the **Configuration** pop-up menu to select a channel configuration for the FX channel track.
 3. Open the **Effect** pop-up menu and select an effect from the selector.
 4. Open the **FX Channels Folder** pop-up menu and select, if you want to create fx channel tracks inside or outside a dedicated folder.
 5. Click **Add Track**.
-

RESULT

An FX channel track is added to the track list and the selected effect is loaded into the first insert effect slot of the FX channel.

Adding Insert Effects to FX Channel Tracks

You can add insert effects to FX channel tracks.

PREREQUISITE

You have added an FX channel track and set up the correct output bus in the **Output Routing** pop-up menu.

PROCEDURE

1. In the track list for the FX channel track, click **Edit Channel Settings**. The **Channel Settings** window for the FX channel track opens.
 2. In the **Inserts** section, click an insert slot on the **Inserts** tab, and select an effect from the selector.
-

RESULT

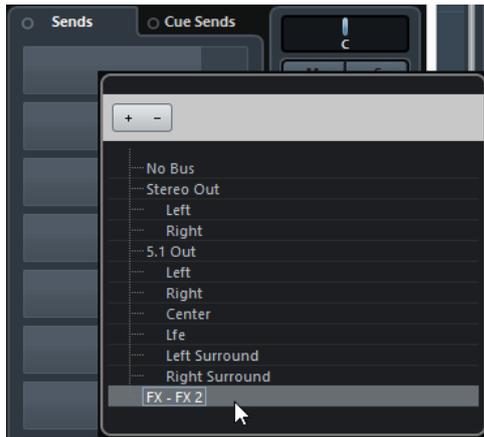
The selected effect is added as an insert effect to the FX channel track.

Routing Audio Channels to FX Channels

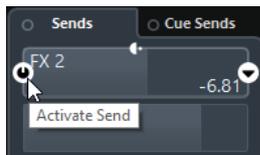
If you route an audio channel send to an FX channel, the audio is routed through the insert effects that you have set up for the FX channel.

PROCEDURE

1. Select the audio track.
2. In the track list, click **Edit Channel Settings** to open the **Channel Settings** window.
3. In the **Sends** section on the **Destinations** tab, click **Select Destination** for an effect slot, and select the FX channel track from the selector.



4. On the send slot, click **Activate/Deactivate Send**.



RESULT

The audio is routed through the FX channel.

AFTER COMPLETING THIS TASK

In the **Channel Settings** window for the audio channel you can hold down **Alt** and double-click to show the send destination. If you have routed the send to an FX channel, the effect control panel is opened.

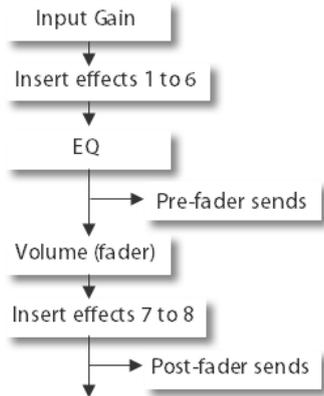
RELATED LINKS

[Adding FX Channel Tracks](#) on page 382

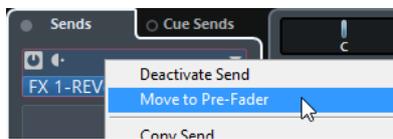
Pre/Post Fader Sends

You can send the signal from the audio channel to the FX channel before or after the audio channel volume fader.

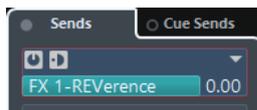
- Pre-fader sends
The audio channel signal is sent to the FX channel before the audio channel volume fader.
- Post-fader sends
The audio channel signal is sent to the FX channel after the audio channel volume fader.



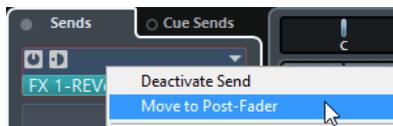
- To move a send to pre-fader position, open the **Channel Settings** window for the audio channel, right-click a send and select **Move to Pre-Fader**.



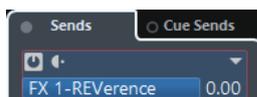
The **Pre/Post Fader** button indicates that the send is in pre-fader position.



- To move a send to post-fader position, open the **Channel Settings** window for the audio channel, right-click a send and select **Move to Post-Fader**.



The **Pre/Post Fader** button indicates that the send is in post-fader position.



NOTE

If you activate **Mute Pre-Send when Mute** in the **Preferences** dialog on the **VST** page, sends in pre-fader mode are muted if you mute their channels.

Setting Pan for the Sends (Cubase Pro only)

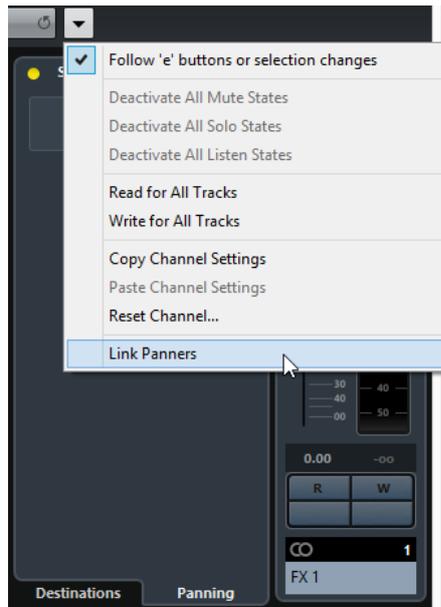
PROCEDURE

1. Select the audio track.
2. In the track list, click **Edit Channel Settings** to open the **Channel Settings** window.
3. On the **Sends** tab, click **Panning**.
For each send, a pan fader is shown.

NOTE

Depending on the routing, different pan controls are available for the sends.

4. Optional: Open the **Functions Menu** and activate **Link Panners**.

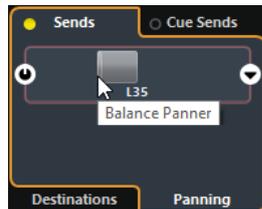


The send panners will then follow the pan for the channel, making the stereo imaging as clear and true as possible.

NOTE

In the **Preferences** dialog on the **VST** page, you can set this as a default behavior for all channels.

5. Click and drag the pan control for the send.



NOTE

You can reset the pan control to the center position by **Ctrl/Cmd**-clicking on the pan control.

RELATED LINKS

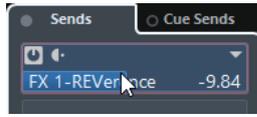
[Surround Sound \(Cubase Pro only\)](#) on page 563

Setting Level for the Sends

PROCEDURE

1. In the track list, select the FX channel track that contains the effect for which you want to set the level.
2. Open the **Inserts** section of the Inspector and click the effect slot to open the effect control panel.
3. In the effect control panel, set the **Mix** control to 100.
This allows for full control of the effect level when you use the effect sends to control the signal balance later.
4. In the track list, select the audio track that is routed through the effect for which you want to set the level.

5. Click **Edit Channel Settings** to open the **Channel Settings** window for the audio track.
6. In the **Sends** section on the **Destinations** tab, locate the effect slot and drag to the left or right to set the send level.



This determines how much of the signal from the audio channel is routed to the FX channel.

RESULT

The effect level is adjusted according to your settings.

NOTE

To determine how much of the signal from the FX channel is sent to the output bus, open the **Channel Settings** window for the FX channel track and adjust the effect return level.

Side-Chain Input

Many VST 3 effects feature a side-chain input. Side-chaining allows you to use the output of one track to control the action of an effect on another track.

Effects from the following categories feature side-chain:

- Modulation
- Delay
- Filter

By activating the side-chain input you can:

- Use the side-chain signal as a modulation source.
- Apply ducking to the instrument, that is, reduce the volume of the instrument track when a signal is present on the audio track.
- Compress the signals on one audio track when a second audio track starts.
This is typically used to add compression on a bass sound when the drums are hit.

NOTE

For detailed descriptions of the plug-ins that feature side-chaining, see the separate PDF document **Plug-in Reference**.

NOTE

- Certain combinations of tracks and side-chain inputs may lead to feedback loops and added latency. If this is the case, the side-chain options are not available.
 - Side-chain connections are only kept when you move an effect within a channel. When you drag and drop an effect between channels, or when you copy an effect into another effect slot the side-chain connections are lost.
-

Side-chain and Modulation

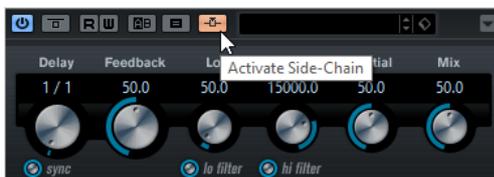
Side-chain signals bypass the built-in LFO modulation and apply modulation according to the envelope of the side-chain signal. Since each channel is analyzed and modulated separately, this allows for creating astonishing spatial modulation effects.

Triggering a Delay Effect with Side-Chain Signals

You can use side-chain signals to create a ducking delay effect. This is useful if you want to apply a delay effect that is audible only when no signal is present on a track.

PROCEDURE

1. Select the audio track that contains the audio you want to delay.
2. Select **Project > Duplicate Tracks**.
The events on the duplicated track are only used to reduce the volume of the effect that is added to the original track.
3. Select the original track.
4. In the **Inspector**, open the **Inserts** section and select **Delay > PingPongDelay**, for example.
The control panel for the effect opens.
5. Make the desired effect settings for the effect, and activate **Activate Side-Chain**.



6. In the track list, select the duplicated track.
7. In the Inspector, click **Output Routing** and select the side-chain node for the **PingPongDelay** effect that you set up.



RESULT

The signals from the duplicated track are routed to the effect. Every time the audio signals on the track set in, the delay effect is deactivated.

NOTE

To ensure that audio signals of low or middle volume also silence the delay effect, you can adjust the volume of the duplicated track.

Triggering a Compressor with Side-Chain Signals

Compression, expansion, or gating can be triggered by side-chain signals exceeding a specified threshold. This allows you to lower the volume of one audio signal every time another audio signal sets in.

PREREQUISITE

You have set up a project with a bass guitar and a bass drum track, and you want to lower the bass guitar volume each time the bass drum hits.

PROCEDURE

1. Select the bass guitar track.
 2. In the **Inspector**, open the **Inserts** section.
 3. Click the first effect slot and from the selector, select **Dynamics > Compressor**.
The effect is loaded and the effect control panel opens.
 4. Make the desired effect settings for the effect, and activate **Activate Side-Chain**.
 5. Select the bass drum track.
 6. In the **Inspector**, open the **Sends** section.
 7. Click the first effect slot and select the side-chain node for the **Compressor** effect that you set up for the bass guitar track.
 8. Click **Activate Send**, and adjust the **Send** level.
-

RESULT

The bass drum signal triggers the **Compressor** on the bass guitar track. When you now play back the project, the bass guitar will be compressed whenever the signals on the bass drum track exceed the set threshold.

Dither Effects

Dither effects allow you to control the noise that is produced by quantization errors that can occur when you mix down to a lower resolution.

Dithering adds a special kind of noise at an extremely low level to minimize the effect of quantization errors. This is hardly noticeable and much preferred to the distortion that otherwise occurs.

NOTE

As Cubase internally uses 32-bit float resolution, all integer resolutions are lower. However, the negative effects are most noticeable when mixing down to 16-bit format or lower.

Applying Dither Effects

PROCEDURE

1. Select **Devices > MixConsole**.
 2. Open the **Rack Settings** and activate **Fixed Number of Slots**.
 3. Click **Edit Channel Settings** for the output channel.
 4. In the **Inserts** section, click the effect slot 7 or 8, and select **Mastering > UV22HR** from the selector.
The 2 last Insert effect slots are post-fader, which is crucial for a dithering plug-in.
 5. In the plug-in control panel, select a resolution.
Set this to the resolution of your audio hardware, for playback, or to the desired resolution for the mixdown file you want to create.
-

RELATED LINKS

[Export Audio Mixdown](#) on page 890
[Rack Settings](#) on page 309

External Effects (Cubase Pro only)

You can integrate external effect devices into the sequencer signal flow by setting up external FX busses.

An external FX bus is a combination of outputs (sends) and inputs (returns) on your audio hardware, along with a few additional settings.

All external FX busses you have created are available on the effect pop-up menus. If you select an external effect as an insert effect for an audio track, the audio is sent to the corresponding audio output, processed in your hardware effect and returned via the specified audio input.

RELATED LINKS

[VST Connections](#) on page 24

[External Instruments and Effects \(Cubase Pro only\)](#) on page 34

Effect Control Panel

The effect control panel allows you to set up the parameters of the selected effect. The contents, design, and layout of the control panel depend on the selected effect.

- To open the control panel for a plug-in, click the effect slot.

The following controls are available for all effects:



1. **Activate Effect**
Activates/Deactivates the effect.
2. **Bypass Effect**
Allows you to bypass the effect.
3. **Read/Write Automation**
Allows you to read/write automation for the effect parameter settings.
4. **Switch between A/B Settings**
Switches to setting B when setting A is active, and to setting A when setting B is active.
5. **Copy A to B**
Copies the effect parameters of effect setting A to effect setting B.
6. **Activate Side-Chain**
Activates the side-chain functionality.
7. **Preset browser**
Opens the preset browser where you can select another preset.
8. **Preset Management**
Opens a pop-up menu that allows you to save, rename, or remove a preset.
9. **Functions menu**

Opens a menu with specific functions and settings.

NOTE

For detailed information about the included effects and their parameters, see the separate PDF document **Plug-in Reference**.

Fine-Tuning Effect Settings

You can take your effect parameter settings as a starting point for further fine-tuning, and then compare the new settings with the original settings.

PREREQUISITE

You have adjusted the parameters for an effect.

PROCEDURE

1. On the control panel for the effect, click **Switch between A/B Settings**.
This copies the initial parameter setting A to setting B.
 2. Fine-tune the effect parameters.
These parameter settings are now saved as setting B.
-

RESULT

You can now switch between both settings by clicking **Switch between A/B Settings**. You can compare them, make further adjustments or just go back to setting A. Settings A and B are saved with the project.

AFTER COMPLETING THIS TASK

You can copy the settings between A and B by clicking **Copy A to B**. You can take these settings as a starting point for further fine-tuning.

Effect Presets

Effects presets store the parameter settings of an effect. The included effects come with a number of presets that you can load, adjust, and save.

The following effect preset types are available:

- VST presets for a plug-in.
These are plug-in parameter settings for a specific effect.
- Inserts presets that contain insert effect combinations.
These can contain the whole insert effects rack with settings for each effect.

Effect presets are saved in the following location:

- **Windows:** \Users\\My Documents\VST 3 Presets\\- **Mac OS:** /Users/<user name>/Library/Audio/Presets/<company>/<plug-in name>

RELATED LINKS

[Loading Effect Presets on page 391](#)

[Loading Insert Presets on page 394](#)

Preset Browser

The preset browser allows you to select a VST preset for the loaded effect.

- To open the preset browser, click the preset browser field in the effect control panel.

NOTE

The preset browser contains the **Results**, and the **Previewer** sections. To open the **Filters** and the **Location Tree** sections, click **Set up Window Layout** and activate the corresponding options.



1. **Location Tree**
Shows the folder that is searched for preset files.
2. **Filters**
Shows the available preset attributes for the selected effect.
3. **Results**
Lists the available presets for the selected effect.
4. **Previewer**
Allows you to preview the files shown in the results list.

Loading Effect Presets

Most VST effect plug-ins come with a number of useful presets that you can instantly select.

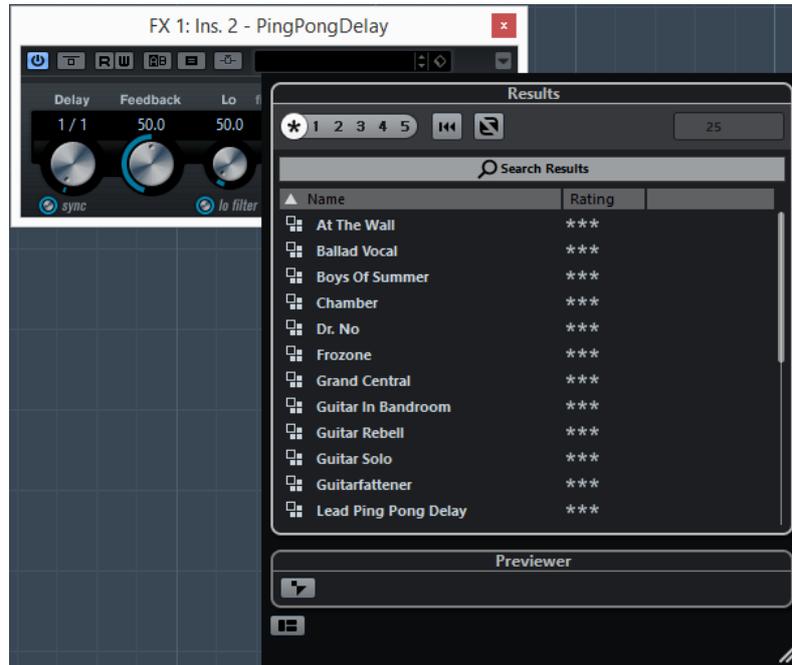
PREREQUISITE

You have loaded an effect, either as a channel insert or into an FX channel, and the effect control panel is open.

PROCEDURE

1. Perform one of the following actions:

- Click the preset browser field at the top of the control panel.
- In the **Inspector** or the **Channel Settings** window, open the **Inserts** section and click **Select Preset** for the loaded effect.



2. In the **Results** section, select a preset from the list.
3. Optional: Activate playback to audition the selected preset, and step through the presets until you find the right sound.

NOTE

You can set up cycle playback of a section to make comparisons between different preset settings easier.

4. Double-click to load the preset that you want to apply.

RESULT

The preset is loaded.

AFTER COMPLETING THIS TASK

You can return to the preset that was selected when you opened the preset browser by clicking **Revert to Last Setting**.

Saving Effect Presets

You can save your effect settings as presets for further use.

PROCEDURE

1. Open the **Preset Management** pop-up menu.



2. Select **Save Preset**
The **Save** <plug-in name> **Preset** pane opens.
 3. In the **New Preset** section, enter a name for the new preset.
 4. Optional: Click **New Folder** to add a subfolder inside the effect preset folder.
 5. Optional: Click **Show Attribute Inspector** in the bottom left corner of the pane and define attributes for the preset.
 6. Click **OK**.
-

RESULT

The effect preset is saved.

RELATED LINKS

[Attribute Inspector](#) on page 549

Saving Default Effect Presets

You can save your effect parameter settings as default effect preset. This allows you to load your parameters settings automatically, every time you select the effect.

PROCEDURE

1. Open the **Preset Management** pop-up menu.



2. Select **Save as Default Preset**.
You are asked if you want to save the current settings as default preset.
 3. Click **Yes**.
-

RESULT

The effects settings are saved as default preset. Every time you load the effect, the default preset is loaded automatically.

Copying and Pasting Presets Between Effects

You can copy and paste effect presets between different instances of the same plug-in.

PROCEDURE

1. Open the control panel for the effect that you want to copy.
 2. Right-click the control panel, and select **Copy <plug-in name> Setting** from the context menu.
 3. Open another instance of the same effect.
 4. Right-click the control panel, and select **Paste <plug-in name> Setting** from the context menu.
-

Saving Insert Presets

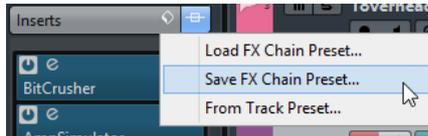
You can save the inserts of the inserts effect rack for a channel, together with all parameter settings as an inserts preset. Inserts presets can be applied to audio, instrument, FX channel, or group tracks.

PREREQUISITE

You have loaded a combination of insert effects and the effect parameters are set up for each effect.

PROCEDURE

1. Select the track.
2. In the **Inspector**, open the **Inserts** section.
3. On the **Inserts** tab, click **Preset Management** and select **Save FX Chain Preset**.



4. In the **Save FX Chain Preset** pane, enter a name for the new preset in the **New Preset** section.
5. Click **OK**.

RESULT

The insert effects and their effect parameters are saved as insert preset.

Loading Insert Presets

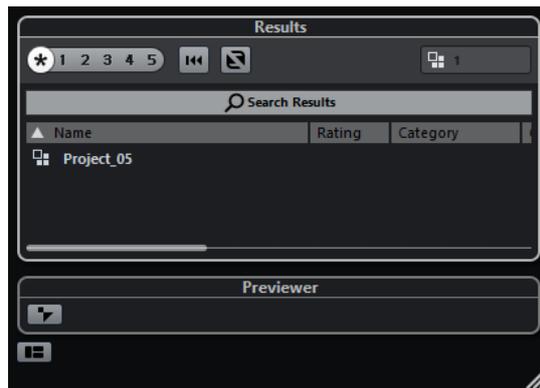
You can load insert presets to audio, group, instrument, and FX channels.

PREREQUISITE

You have saved a combination of insert effects as insert presets.

PROCEDURE

1. Select the track you want to apply the new preset to.
2. In the **Inspector**, open the **Inserts** section.
3. On the **Inserts** tab, click **Preset Management** and select **Load FX Chain Preset**.



4. Select an insert preset.
5. Double-click to apply the preset and close the pane.

RESULT

The effects of the insert effect preset are loaded and any plug-ins that were previously loaded for the track are removed.

Loading Insert Effect Settings from Track Presets

You can extract the effects that are used in a track preset and load them into your inserts rack.

PROCEDURE

1. Select the track you want to apply the new preset to.
2. In the **Inspector**, open the **Inserts** section.
3. On the **Inserts** tab, click **Preset Management** and select **From Track Preset**.
4. In the track preset pane, select the preset that contains the insert effects you want to load.
5. Double-click, to load the effects and close the pane.

RESULT

The effects used in the track preset are loaded.

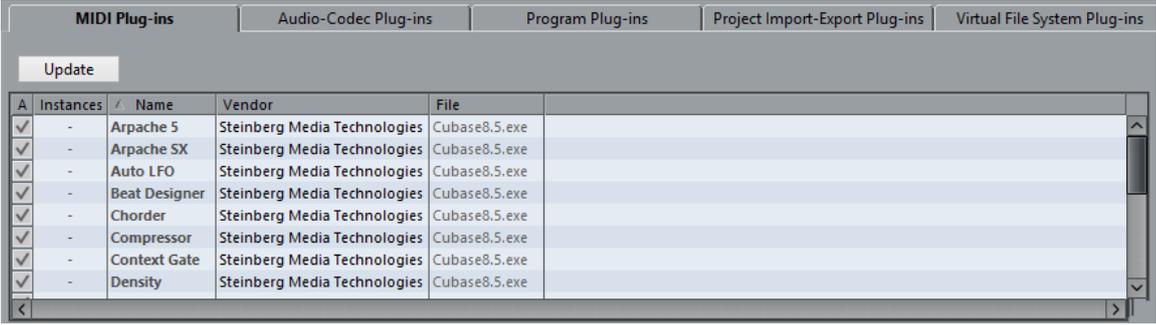
RELATED LINKS

[Track Presets](#) on page 177

Plug-In Information Window

The **Plug-in Information** window lists all the available MIDI plug-ins, audio-codec plug-ins, program plug-ins, project import-export plug-ins, and the virtual file system plug-ins.

- To open the **Plug-in Information** window, select **Devices > Plug-in Information**.



The screenshot shows the 'MIDI Plug-ins' tab of the Plug-in Information window. It features a table with columns for 'Instances', 'Name', 'Vendor', and 'File'. The table lists several Steinberg Media Technologies plug-ins, all with file names ending in 'Cubase8.5.exe'. There is an 'Update' button above the table.

A	Instances	Name	Vendor	File
✓	-	Arpache 5	Steinberg Media Technologies	Cubase8.5.exe
✓	-	Arpache SX	Steinberg Media Technologies	Cubase8.5.exe
✓	-	Auto LFO	Steinberg Media Technologies	Cubase8.5.exe
✓	-	Beat Designer	Steinberg Media Technologies	Cubase8.5.exe
✓	-	Chorder	Steinberg Media Technologies	Cubase8.5.exe
✓	-	Compressor	Steinberg Media Technologies	Cubase8.5.exe
✓	-	Context Gate	Steinberg Media Technologies	Cubase8.5.exe
✓	-	Density	Steinberg Media Technologies	Cubase8.5.exe

Update

Re-scans the designated plug-in folders for updated plug-in information.

The following columns are available:

Active

Allows you to activate or deactivate a plug-in.

Instances

The number of plug-in instances that are used in Cubase.

Name

The name of the plug-in.

Vendor

The manufacturer of the plug-in.

File

The name of the plug-in, including its file name extension.

Path

The path in which the plug-in file is located.

Category

The category of each plug-in.

Version

The version of the plug-in.

SDK

The version of the VST protocol with which the plug-in is compatible.

Managing Plug-Ins in the Plug-In Information Window

- To make a plug-in available for selection, activate the checkbox in the left column. Only the activated plug-ins appear in the effect selectors.
- To see where a plug-in is used, click in the Instances column.

NOTE

A plug-in may be in use even if it is not activated in the left column. The left column only determines whether or not the plug-in is visible on the effect selectors.

Exporting Plug-In Information Files

You can save plug-in information as an XML file, for example, for archiving purposes or troubleshooting.

- The plug-in information file contains information on the installed/available plug-ins, their version, vendor, etc.
- The XML file can then be opened in any editor application supporting the XML format.

NOTE

The export function is not available for program plug-ins.

PROCEDURE

1. In the **Plug-in Information** window, right-click in the middle of the window and select **Export**.
 2. In the dialog, specify a name and location for the plug-in information export file.
 3. Click **Save** to export the file.
-

Audio Processing and Functions

If you process audio in Cubase, you can always undo changes or revert to the original version. This is possible because processing does not affect the actual audio files.

If you process an event or a selection range, the following happens:

- A new audio file is created in the **Edits** folder, within your project folder. This file contains the processed audio, and the processed section of the audio clip refers to it.
- The original file remains unaffected. The unprocessed sections still refer to it.

NOTE

In the **Offline Process History** dialog, you can undo any processing, at any point and in any order.

Processing is always applied to the selection. This can be events in the **Project** window in the **Audio Part Editor**, an audio clip in the **Pool**, or a selection range in the **Project** window or in the **Sample Editor**.

If you select an event that is a shared copy, and therefore refers to a clip that is used by other events in the project, you can decide how to proceed:

- Select **New Version** to process the selected event only.
- Select **Continue** to process all shared copies.

RELATED LINKS

[Offline Process History](#) on page 410

Common settings and features

The settings for the selected audio processing function are shown in a dialog that opens when you select the function from the **Process** submenu. Select **Audio > Process**.

The following features and settings work in the same way for several functions:

- Preview
- Process
- Cancel

The following common settings may be hidden when the dialog opens. To reveal them, click **More**.



- Pre/Post-Crossfade

Preview, Process, and Cancel buttons

The preview, process, and cancel buttons have the following functionalities:

Preview button

Allows you to listen to the result of the processing with the current settings until you click the button again, or until you press **Space**. You can make adjustments during **Preview** playback.

Process button

Allows you to perform the processing and close the dialog.

NOTE

You can also press **Enter** or **Return**.

Cancel button

Allows you to close the dialog without processing.

Pre/Post-Crossfade

The common settings **Pre-Crossfade** and **Post-Crossfade** allow you to gradually mix the effect in or out.

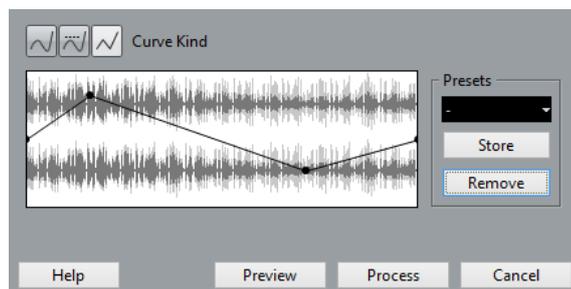
- If you activate **Pre-Crossfade** and specify a value, the processing is applied gradually from the start of selection.
- If you activate **Post-Crossfade** and specify a value, the processing is gradually removed, starting at the specified interval before the end of the selection.

IMPORTANT

The sum of the **Pre-Crossfade** and **Post-Crossfade** values cannot be larger than the length of the selection.

Envelope

The **Envelope** function allows you to apply a volume envelope to the selected audio.



The available options are:

Curve Kind buttons

Determine whether the corresponding envelope uses **Spline Interpolation** (left button), **Damped Spline Interpolation** (middle button) or **Linear Interpolation** (right button).

Envelope display

Shows the shape of the envelope. The resulting waveform shape is shown in a dark tone, with the current waveform shape in a light tone.

Click the curve to add points, and click and drag existing points to change the shape. To remove a point from the curve, drag it outside the display.

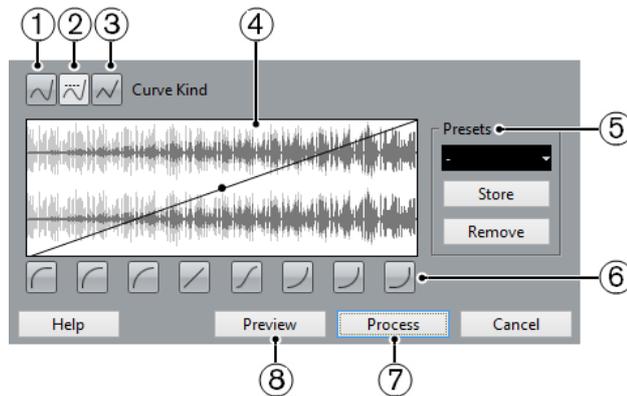
Presets

Allow you to set up presets that you want to apply to other events or clips.

- To save a preset, click **Store**, type in a name and click **OK**.
- To apply a preset, select it from the pop-up menu.
- To rename the selected preset, double-click on the name and type in a new one.
- To remove a preset, select it from the pop-up menu and click **Remove**.

Fade In and Fade Out

The **Fade In** and **Fade Out** functions allow you to apply a fade to the selected audio.



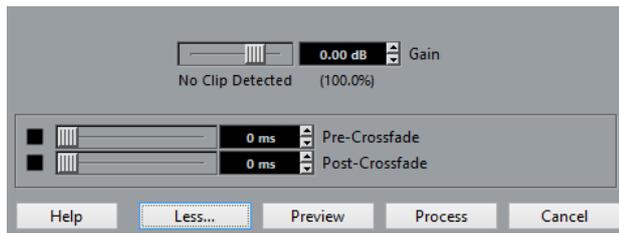
The available options are:

1. **Spline Interpolation**
Applies a spline interpolation to the curve.
2. **Damped Spline Interpolation**
Applies a damped spline interpolation to the curve.
3. **Linear Interpolation**
Applies a linear interpolation to the curve.
4. **Fade display**
Shows the shape of the fade curve. The resulting waveform shape is shown in a dark tone, with the current waveform shape in a light tone.
Click the curve to add points, and click and drag existing points to change the shape. To remove a point from the curve, drag it outside the display.
5. **Presets**
In this section you can set up presets for fade in or fade out curves that you want to apply to other events or clips.
 - To save a preset, click **Store**, type in a name, and click **OK**.
 - To apply a preset, select it from the pop-up menu.
 - To rename the selected preset, double-click the name and type in a new one.

- To remove a preset, select it from the pop-up menu and click **Remove**.
6. **Shape buttons**
These buttons give you quick access to some common curve shapes.
 7. **Process**
Applies the set fade curve to the clip, and closes the dialog.
 8. **Preview**
Plays back the fade area. Playback repeats until you click the button again (the button is labeled **Stop** during playback).

Gain

Allows you to change the gain, that is, the level of the selected audio.



The available options are:

Gain

Allows you set a gain value between -50 dB and +20 dB.

Clipping detection text

This text is displayed if you use **Preview** and the gain setting results in audio levels above 0 dB.

NOTE

In case of clipping, lower the **Gain** value and use the **Normalize** function instead. This allows you to increase the level of the audio as much as possible without causing clipping.

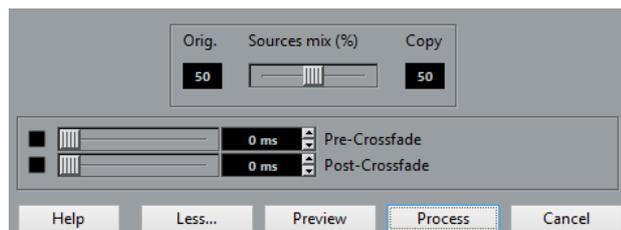
RELATED LINKS

[Pre/Post-Crossfade](#) on page 398

[Normalize](#) on page 402

Merge Clipboard

This function allows you to mix audio from the clipboard into the audio that you selected for processing.



IMPORTANT

This function is only available if you cut or copy a range of audio in the **Sample Editor**.

The available options are:

Sources mix

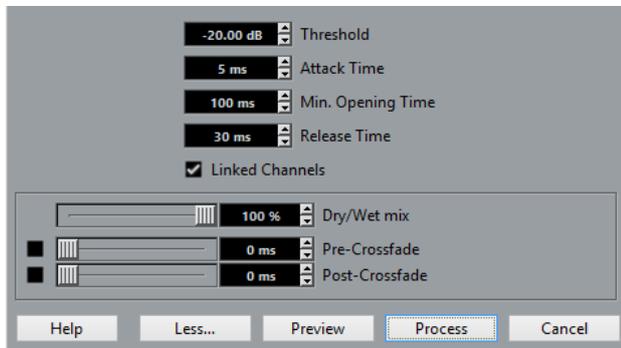
Allows you to specify a mix ratio between the original audio that you have selected for processing, and the copied audio from the clipboard.

RELATED LINKS

[Pre/Post-Crossfade](#) on page 398

Noise Gate

Noise Gate allows you to replace the audio sections below a specified threshold level with silence.



The available options are:

Threshold

Allows you to set the level below which you want audio to be silenced.

Attack Time

Allows you to set the time it takes for the gate to open again after the audio level has exceeded the threshold level.

Min. Opening Time

Allows you to set the minimum opening time of the gate. If the gate opens and closes too often when processing material that varies rapidly in level, try raising this value.

Release Time

Allows you to set the time it takes for the gate to close fully after the audio level has dropped below the threshold level.

Linked Channels

This is available for stereo audio only. Activate this to open the **Noise Gate** for both channels as soon as one or both channels exceed the Threshold level. Deactivate this if you want **Noise Gate** to work independently for the left and right channel.

Dry/Wet mix

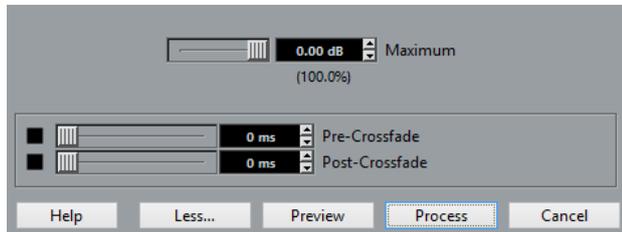
Allows you to specify a mix ratio between dry and wet sound.

RELATED LINKS

[Pre/Post-Crossfade](#) on page 398

Normalize

The **Normalize** function allows you to raise the level of audio that was recorded at too low an input level.



The available options are:

Maximum

Allows you to set a maximum level for the audio, between -50 dB and 0 dB.

From this maximum level, the current maximum level of the selected audio is subtracted, and the gain is raised or lowered by the resulting amount.

RELATED LINKS

[Pre/Post-Crossfade](#) on page 398

Phase Reverse

Phase Reverse allows you to reverse the phase of the selected audio.

The available options are:

Phase Reverse on

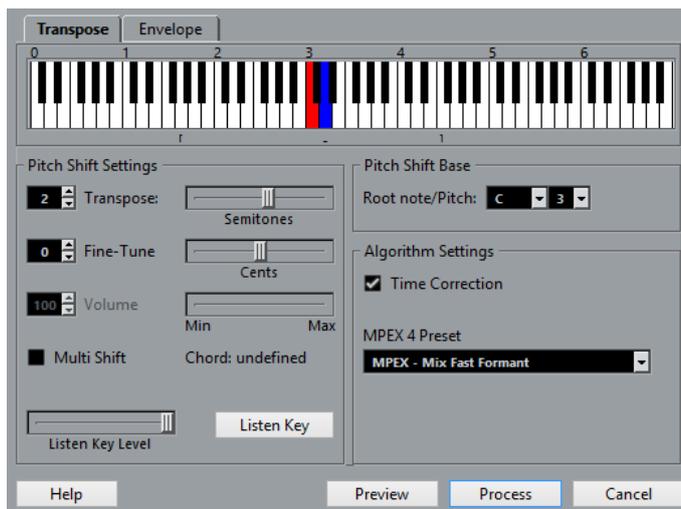
This pop-up menu is only available for stereo audio files. It allows you to specify which channels are phase-reversed.

RELATED LINKS

[Pre/Post-Crossfade](#) on page 398

Pitch Shift

This function allows you to change the pitch of the audio with or without affecting its length. You can also create harmonies by specifying several pitches or apply pitch shift based on an envelope curve.



When the **Transpose** tab is selected, the available options are:

Keyboard display

Shows a graphic overview of the transposition where the root note is indicated in red and the transposed is indicated key in blue.

NOTE

The indicated root note has nothing to do with the key or pitch of the original audio, it just provides a way to display transpose intervals.

- To change the root note, use the settings in the **Pitch Shift Base** section, or hold **Alt**, and click in the keyboard display.
- To specify a transpose interval, click one of the keys.
To remove a transpose interval, click the blue key again.
- To specify a chord, activate **Multi Shift** and click several keys.

Pitch Shift settings

Transpose and **Fine-Tune** allow you to specify the amount of pitch shift in semitones and cents.

Volume/Amplitude

Allows you to lower the volume of the pitch-shifted sound. This is not available if **Time Correction** is activated.

Multi Shift

Activate this to specify several transpose keys and create multi-part harmonies. If the intervals you add make up a standard chord, this chord is displayed to the right.

- To include the original, untransposed sound, click the root key in the keyboard display so that it is displayed in blue.

NOTE

In **Multi Shift** mode the **Preview** function is not available.

Listen Key Level

Allows you to adjust the level of the pitch-shifted sound.

Listen Key/Chord button

Click this button to play a test tone of the pitch-shifted sound.

Pitch Shift Base

Allows you to set the root note.

NOTE

The indicated root note has nothing to do with the key or pitch of the original audio, it just provides a way to display transpose intervals.

Time Correction

Activate this option to shift the pitch without affecting the length of the audio. If this is deactivated, raising the pitch will shorten the audio section and vice versa, much like changing the playback speed on a tape recorder.

MPEX 4 Preset

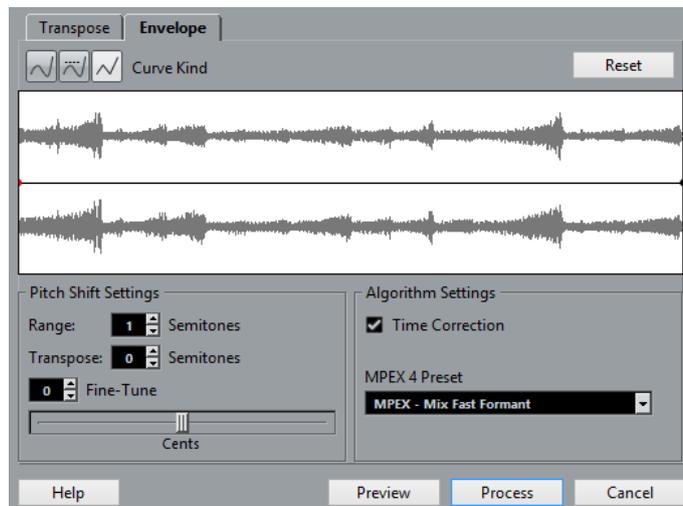
Allows you to select an MPEX 4 algorithm.

RELATED LINKS

[Time Stretch and Pitch Shift Algorithms](#) on page 418

Envelope-Based Pitch Shift

When the **Envelope** tab is selected, you can specify an envelope curve as a base for the pitch shift.



Envelope display

Shows the shape of the envelope curve over the waveform image of the audio selected for processing. Envelope curve points above the center line indicate positive pitch shift, curve points below the center line indicate negative pitch shift. Initially, the envelope curve is a horizontal, centered line, indicating zero pitch shift.

- To add a curve point, click the curve.
- To move a curve point, click and drag.
- To remove a curve point, click and drag it outside the display.

Curve Kind

Determine whether the corresponding fade curve uses **Spline Interpolation** (left button), **Damped Spline Interpolation** (middle button) or **Linear Interpolation** (right button).

Range

Allows you to determine the vertical pitch range of the envelope. Moving a curve point to the top of the display shifts the pitch by this value.

Transpose and Fine-Tune

These options allow you to adjust the value of a selected curve point in semitones and cents.

Time Correction

Activate this option to shift the pitch without affecting the length of the audio. If this is deactivated, raising the pitch will shorten the audio section and vice versa, much like changing the playback speed on a tape recorder.

MPEX 4 Preset

Allows you to select an MPEX 4 algorithm.

RELATED LINKS

[MPEX](#) on page 419

Example

Let's say that you want to create a pitchbend effect, so that the pitch is raised linearly by exactly 2 semitones in a specific part of the selected audio.

PROCEDURE

1. Click **Reset** to remove all curve points.
2. Click **Linear Interpolation** to select a linear curve.
3. Set **Range** to 2 semitones or higher.
4. Set a starting point for the pitchbend by adding a curve point.
5. Use **Fine-Tune** to set the curve point to 0 cents and the pitch to 0.
6. Specify the horizontal position where you want the pitchbend to reach the full value by adding a new curve point.
This curve point determines the rise time of the pitchbend. The further away you position it from the starting point, the longer it takes until pitchbend reaches the full value.
7. Use **Transpose** and **Fine-Tune** to set the pitch of the new curve point to exactly 2 semitones.
8. Set the pitchbend duration, that is, the time the pitch remains transposed by adding a new curve point.
9. Optional: Add a new point where you want the pitchbend to end.
This is not necessary if you are at the end of the audio file, since there is always an end point at the right side of the waveform display.
10. Click **Process**.

RESULT

The pitchbend is applied according to the specified settings.

Remove DC Offset

Allows you to remove any DC offset in the audio selection. This function is recommended for zero crossing detection and certain processing.

If your audio signal contains a too large component of direct current, you may notice that it is not centered around the zero level axis. This is called DC offset.

- To see if your audio contains DC offsets, select the audio and select **Audio > Statistics**.

IMPORTANT

Always apply this function to complete audio clips. DC offset is normally present throughout the entire recording.

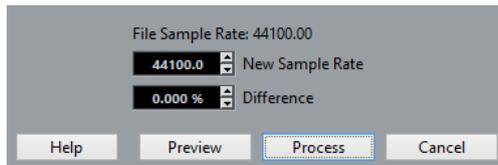
There are no parameters for this function.

RELATED LINKS

[Statistics](#) on page 417

Resample

The **Resample** function allows you to change the length, tempo and pitch of an event. If you resample to a higher sample rate, the event gets longer and the audio plays back at a slower speed with a lower pitch. If you resample to a lower sample rate, the event gets shorter and the audio plays back at a faster speed with a higher pitch.



File Sample Rate

Shows the original sample rate of the event.

New Sample Rate

Allows you to resample the event by specifying a sample rate.

Difference

Allows you to resample the event by specifying the difference between the original sample rate and the desired new one.

Reverse

Allows you to reverse the audio selection so that it sounds as if you play back a tape backwards. There are no parameters for this function.

Silence

Allows you to replace the selection with silence. There are no parameters for this function.

Stereo Flip

This function allows you to manipulate the left and right channels of stereo audio selections.

In the **Mode** pop-up menu, the available options are:

Flip Left-Right

Swaps the left and right channel.

Left to Stereo

Copies the left channel sound to the right channel.

Right to Stereo

Copies the right channel sound to the left channel.

Merge

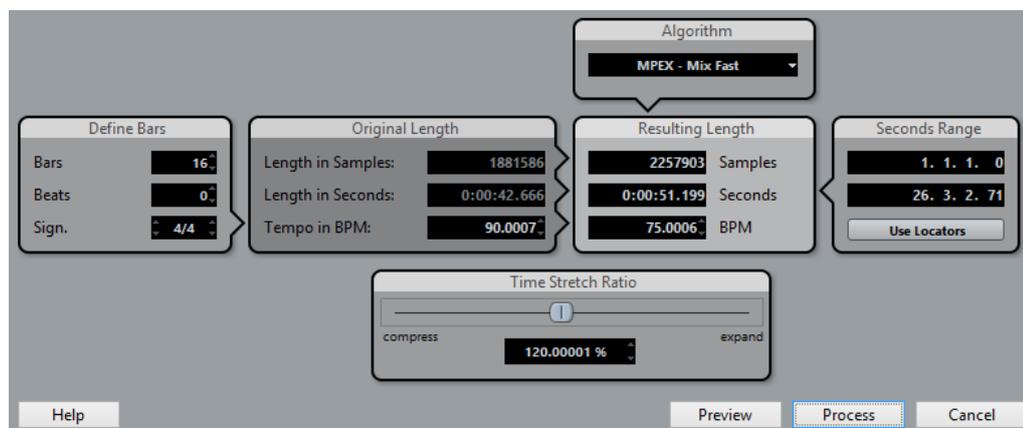
Merges both channels on each side for mono sound.

Subtract

Subtracts the left channel information from the right. This function is typically used for karaoke background as it removes the centered mono material from a stereo signal.

Time Stretch

This function allows you to change the length and tempo of the selected audio without affecting the pitch.



The available options are:

Define Bars section

If you use the tempo setting, you can set the length of the selected audio and the time signature in this section.

- **Bars**
Specifies the length of the selected audio, in bars.
- **Beats**
Specifies the length of the selected audio, in beats.
- **Sign.**
Specifies the time signature.

Original Length section

This section contains information and settings regarding the audio that is selected for processing.

- **Length in Samples**
The length of the selected audio, in samples.
- **Length in Seconds**
The length of the selected audio, in seconds.
- **Tempo in BPM**
Allows you to enter the actual tempo of the audio in beats per minute. This option allows you to time-stretch the audio to another tempo, without having to compute the actual time stretch amount.

Resulting Length section

These values change automatically if you adjust the **Time Stretch Ratio** to stretch the audio so that it fits within a specific time span or tempo.

- **Samples**
The resulting length in samples.
- **Seconds**
The resulting length in seconds.
- **BPM**
The resulting tempo in beats per minute. For this to work, the **Original Length** must be specified.

Seconds Range section

These settings allow you to set a range for the time stretch.

- **Arbitrary Range Start Time**
Allows you to set a start position for the range.
- **Arbitrary Range End Time**
Allows you to set an end position for the range.
- **Use Locators**
Allows you to set the **Range** values to the left and right Locator positions, respectively.

Time Stretch Ratio section

Determines the amount of time stretch as a percentage of the original length. If you use the settings in the **Resulting Length** section to specify the amount of time stretch, this value changes automatically.

Algorithm section

Allows you to select a time stretch algorithm.

RELATED LINKS

[Time Stretch and Pitch Shift Algorithms](#) on page 418

Applying Plug-Ins (Cubase Pro only)

You can apply effects permanently to one or several selected events.

PROCEDURE

1. In the **Project** window or in the **Pool** or an editor, select an audio event.
2. Select **Audio > Plug-ins**.
3. From the **Plug-ins** submenu select an effect.
4. Make the desired settings and click **Process** to apply them.

RESULT

The effect is applied permanently to the selected events.

NOTE

If you apply an effect to mono audio material, only the left side of the effect's stereo output is applied.

RELATED LINKS

[Audio Effects](#) on page 371

[Common settings and features](#) on page 397

The Process Plug-In Dialog

The process plug-in dialog contains settings for the actual processing that are common to all plug-ins and described below.

The dialog also contains effect parameters of the selected plug-in that are described in the separate PDF document **Plug-in Reference**.



- To display the section with the common settings for processing, click **More**.

Wet mix/Dry mix

These sliders allow you to specify the balance between wet and dry signals in the resulting clip.

If you raise the **Wet mix** slider, the **Dry mix** slider is lowered by the same amount. If you press **Alt** and drag a slider, you can move it independently.

Tail

Activate this to add space after the original audio section. This avoids that a reverb tail or a delay effect is cut off. The slider allows you to specify a tail length.

Use the **Preview** function to find the appropriate tail length.

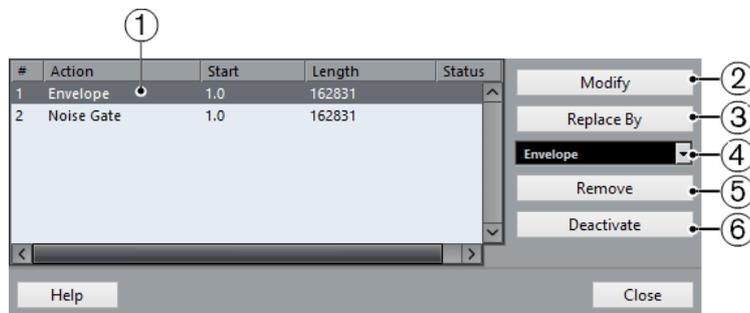
RELATED LINKS

[Pre/Post-Crossfade](#) on page 398

[Preview, Process, and Cancel buttons](#) on page 398

Offline Process History

The **Offline Process History** dialog allows you to remove and modify audio processing.



To open the **Offline Process History** dialog, select **Audio > Offline Process History**.

NOTE

Processes that have no settings cannot be modified. Also, processes that change the length of the clip (such as **Cut**, **Insert**, or **Time Stretch**) can only be modified if they are the most recent processing. This is indicated by an icon in the **Status** column.

1. Action list

Lists all the processes and allows you to select them.

2. Modify

Allows you to open the dialog for the processing function or the applied effect, and to change the settings.

3. Replace By

Allows you to replace the selected processing with the processing selected in the **Process/Plug-ins pop-up menu**. If the selected function has settings, a dialog opens.

4. Process/Plug-ins pop-up menu

Allows you to select a process or a plug-in that replaces the selected process.

5. Remove

Removes the selected process.

6. Activate/Deactivate

Activates/deactivates the process selected in the list.

Modifying Offline Processes

You can remove or modify some or all processing from a clip in the **Offline Process History** dialog. This includes the functions on the **Process** menu, any applied plug-in effects (Cubase Pro only), and **Sample Editor** operations such as Cut, Paste, Delete and drawing with the Draw tool. You can even modify processing in the middle of the process history, while keeping later processing.

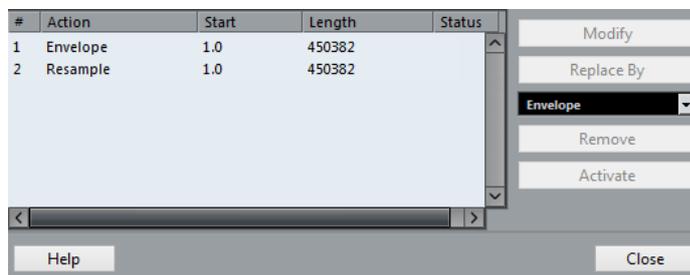
PROCEDURE

1. Perform one of the following actions:

- Select the processed event in the **Project** window.
- Select the clip in the **Pool**.

In the **Pool**, processed clips are indicated by a waveform symbol in the **Status** column.

2. Select **Audio > Offline Process History**.



3. Select the operation in the list that you want to edit by clicking on it.

4. Perform one of the following actions:

- Click **Modify** to modify the settings of the selected processing.
- Select a function from the pop-up menu and click **Replace By** to replace the selected operation, the selected processing function, or effect.
- Click **Remove** to remove the selected operation.
- Click **Deactivate** to undo the selected operation and remove the processing from the clip.

5. Click **Close** to close the dialog.

RESULT

The selected processing is modified.

RELATED LINKS

[Offline Process History](#) on page 410

[Status](#) on page 513

Freeze Edits

Allows you to apply all processing and effects permanently.

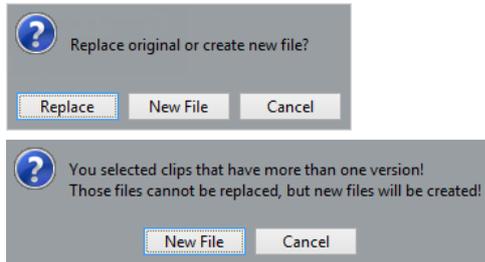
PREREQUISITE

You have applied processing or effects to an audio event or to its audio clip.

PROCEDURE

1. Perform one of the following actions:

- In the **Pool**, select the clip.
 - In the **Project** window, select an event.
2. Select **Audio > Freeze Edits**.
Depending on if other clips refer to the same audio file, one of the following dialogs open.



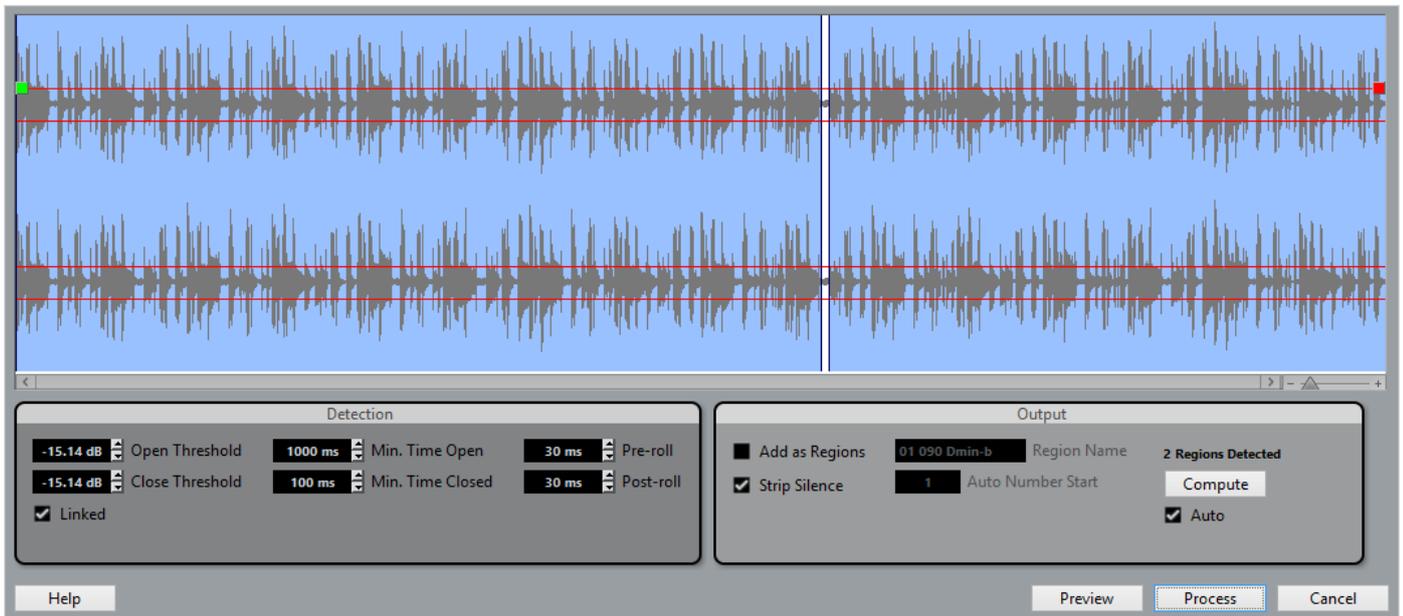
3. Perform one of the following actions:
- Select **Replace** to apply all edits to the original audio file.
 - Select **New File** to leave the original audio file unaffected and to create a new file in the **Audio** folder within the project folder.

RESULT

The audio clip refers to a new, single audio file, and the list in the **Offline Process History** dialog for the clip is cleared.

Detect Silence

The **Detect Silence** function allows you to search for silent sections in an event, and to split the event, removing the silent parts from the project, or to create regions corresponding to the non-silent sections.



- To open the **Detect Silence** dialog, select one or several audio events in the **Project** window or the **Audio Part Editor** and select **Audio > Advanced > Detect Silence**.

NOTE

If you select more than one event, you can process the selected events successively with individual settings or apply the same settings to all selected events at once.

The available options are:

Waveform display

Allows you to zoom in on and out of the waveform by using the zoom slider to the right, by clicking in the waveform, and moving the mouse up or down.

You can scroll the waveform by using the scrollbar, or by using the mouse wheel.

You can adjust the **Open Threshold** and **Close Threshold** values by moving the squares at the beginning and at the end of the audio file.

Open Threshold

When the audio level exceeds this value, the function opens and lets the sound pass. Audio material below the set level is detected as silence.

Close Threshold

When the audio level drops below this value, the function closes and detects sounds below this level as silence. This value cannot be higher than the **Open Threshold** value.

Linked

Activate this, to set the same values for **Open Threshold** and **Close Threshold**.

Min. Time open

Determines the minimum time that the function remains open after the audio level has exceeded the **Open Threshold** value.

NOTE

If your audio contains repeated short sounds, and this results in too many short open sections, try raising this value.

Min. Time closed

Determines the minimum time that the function remains closed after the audio level has dropped below the **Close Threshold** value. Set this to a low value to make sure that you do not remove sounds.

Pre-roll

Causes the function to open slightly before the audio level exceeds the **Open Threshold** value. Use this option to avoid removing the attack of sounds.

Post-roll

Causes the function to close slightly after the audio level drops below the **Close Threshold** value. Use this option to avoid removing the natural decay of sounds.

Add as Regions

Creates regions of the non-silent sections, and allows you to specify a name for them in the **Region Name** field. A number is appended on each region name, starting with the number specified in the **Auto Number Start** field.

Strip Silence

Splits the event at the beginning and end of each non-silent section, and removes the silent sections in between.

Process all selected Events

Applies the same settings to all selected events. This option is only available if you selected more than one event.

Compute

Analyzes the audio event and redraws the waveform display to indicate which sections are considered silent. The number of detected regions is displayed above the **Compute** button.

Auto

Activate this option to analyze the audio event and update the display automatically every time you change the settings.

NOTE

If you are working with very long files, consider deactivating the **Auto** option as this may slow down the process.

Removing Silent Sections

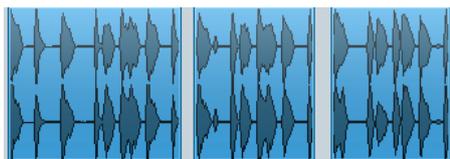
The **Detect Silence** dialog allows you to detect and delete silent sections of your audio.

PROCEDURE

1. Select one or several audio events with silent sections in the **Project** window.
 2. Select **Audio > Advanced > Detect Silence**.
 3. Make your settings in the **Detection** section of the **Detect Silence** dialog.
 4. Click **Compute** to analyze the audio.
The audio is analyzed and the waveform redrawn to indicate which sections are considered silent according to your settings. The number of detected regions is displayed.
 5. Optional: Click **Preview** to listen to the result.
The event is played back and the sections are silenced according to your settings.
 6. Optional: In the **Detection** section, readjust the settings until you are satisfied with the result.
 7. Optional: In the **Output** section, activate **Add as Regions**.
 8. In the **Output** section, activate **Strip Silence**.
 9. Click **Process**.
-

RESULT

The event is split and the silent sections are removed.



AFTER COMPLETING THIS TASK

If you have selected more than one event and did not activate **Process all selected Events**, the **Detect Silence** dialog opens again after processing, allowing you to make separate settings for the next event.

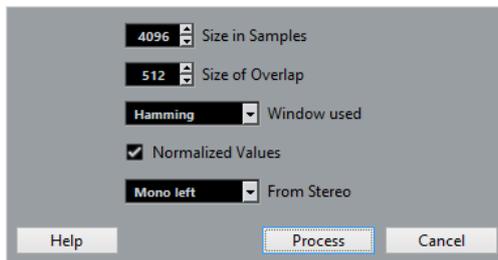
Spectrum Analyzer

The **Spectrum Analyzer** analyzes the selected audio, computes the average spectrum, displays it in a two-dimensional graph, with frequency range on the x-axis and level distribution on the y-axis.

Spectrum Analyzer Settings

To open the **Spectrum Analyzer**, select **Audio > Spectrum Analyzer**.

The **Spectrum Analyzer** shows the following settings:



Size in Samples

Determines a size for the analysis blocks of the audio. The higher this value, the higher the frequency resolution of the resulting spectrum.

Size of Overlap

Determines overlap between each analysis block.

Window used

Selects which window type is used for the fast Fourier transform, the mathematical method used for computing the spectrum.

Normalized Values

Activate this to scale the resulting level values, so that the highest level is displayed as 1 (0 dB).

From Stereo

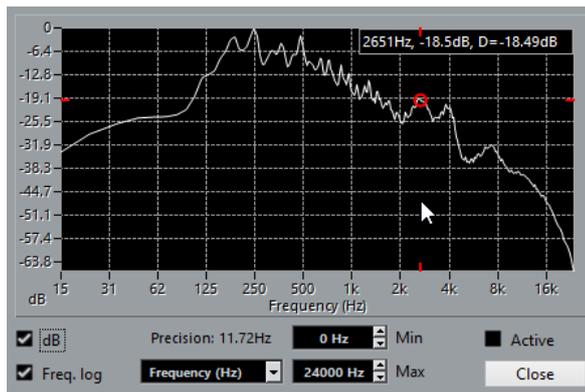
Specifies which channel is analyzed.

Process

Analyzes the spectrum and opens the spectrum display.

Spectrum Display

The **Spectrum Display** shows the following settings:



Frequency display

Allows you to compare the levels between frequencies. Move the pointer to one of the frequencies, right-click and move the pointer to the second frequency. The difference in level between the positions is displayed and labeled **D** in the upper right corner.

NOTE

For stereo audio the display in the upper right corner shows the values for the left channel. To see the right channel values, hold down **Shift**.

dB

Activate this option to show dB values on the vertical axis. Deactivate this option, to show values between 0 and 1.

Freq. log

Activate this option to display the frequencies on the horizontal axis on a logarithmic scale. Deactivate this option, to show a linear frequency axis.

Precision

Indicates the frequency resolution of the graph. This value is governed by the **Size in Samples** setting in the spectrum analyzer settings.

Frequency/Note

Allows you to select if the frequencies are displayed in Hertz or with note names.

Min.

Sets the lowest frequency shown in the graph.

Max.

Sets the highest frequency shown in the graph.

Active

Activate this option to open the next **Spectrum Analysis** dialog in the same window. Deactivate this option to show the next dialog in a separate window.

Analyzing the Audio Spectrum

PROCEDURE

1. Select an audio clip, an event, or a range.
2. Select **Audio > Spectrum Analyzer**.

3. Adjust the settings or use the default values.
The default values give good results in most situations.
 4. Click **Process**.
-

RESULT

The spectrum is computed and displayed as a graph.

AFTER COMPLETING THIS TASK

Adjust the settings in the spectrum display and move the mouse pointer over the graph to display the frequency/note and level at the current position in the upper right corner.

Statistics

Channel	Middle
Min. Sample Value	-0.81 dB
Max. Sample Value	-0.42 dB
Peak Amplitude	-0.42 dB
True Peak	-0.42 dB
DC Offset	0.00 %
	-∞ dB
Resolution	24 Bit
Estimated Pitch	3664.3Hz/A#6
Sample Rate	48.000 kHz
Average RMS (AES-17)	-23.24 dB
Max. RMS	-10.56 dB
Max. RMS All Channels	-10.56 dB
EBU R 128	
Max. Momentary Loudness	-11.59 LUFS
Max. Short-Term Loudness	-13.56 LUFS
Integrated Loudness	-16.33 LUFS
Loudness Range	7.38 LU
Max. True Peak Level	-0.42 dBTP
Help	Copy to Clipboard
	Close

The **Statistics** function analyzes the selected audio events, clips, or range selections and displays a window with the following information:

Channel

Shows the name of the analyzed channel.

Min. Sample Value

Shows the lowest sample value in dB.

Max. Sample Value

Shows the highest sample value in dB.

Peak Amplitude

Shows the largest amplitude in dB.

True Peak

Shows the maximum absolute level of the audio signal waveform in the continuous time domain.

DC Offset

Shows the amount of DC offset as a percentage and in dB.

Resolution

Shows the current calculated audio resolution.

Estimated Pitch

Shows the estimated pitch.

Sample Rate

Shows the sample rate.

Average RMS (AES-17)

Shows the average loudness in accordance with the AES-17 standard.

Max. RMS

Shows the highest RMS value.

Max. RMS All Channels

Shows the highest RMS value of all channels.

Max. Momentary Loudness (Cubase Pro only)

Shows the maximum value of all momentary loudness values, based on a time window of 400 ms. The measurement is not gated.

Max. Short-Term Loudness (Cubase Pro only)

Shows the maximum value of all short-term loudness values, based on a time window of 3 s. The measurement is not gated.

Integrated Loudness (Cubase Pro only)

Shows the average loudness over the whole title in LUFS (Loudness Unit, referenced to Full Scale) in accordance with EBU R-128 that recommends to normalize audio at -23 LUFS (± 1 LU).

Loudness Range (Cubase Pro only)

Shows the dynamic range over the whole title in LU (Loudness Units). This value allows you to see if dynamic processing is needed.

Max. True Peak Level (Cubase Pro only)

Shows the maximum value of the audio signal waveform in the continuous time domain.

RELATED LINKS

[Remove DC Offset](#) on page 406

Time Stretch and Pitch Shift Algorithms

In Cubase, time stretching and pitch shifting algorithms are used for numerous operations like for the **Time Stretch** and **Pitch Shift** offline processes, in the **Sample Editor**, or for the **Flatten** function. Depending on the feature, some or all of the following algorithm presets are available.

élastique

The élastique algorithm is suited for both polyphonic and monophonic material. The algorithm has 3 modes, and there are 3 presets for each mode.

The following modes are available:

élastique Pro

For best audio quality, without formant preservation.

élastique Pro Formant

For best audio quality, but including formant preservation.

élastique efficient

Requires less computing power, but has a lower audio quality than the Pro modes.

The modes support the following variants:

Time

Favors timing accuracy over pitch accuracy.

Pitch

Favors pitch accuracy over timing accuracy.

Tape

Locks the pitch shift to the time stretch as if playing back a tape with varying speed. If you stretch the audio material, the pitch decreases automatically. This variant has no effect if you use it with event transpose or the transpose track.

MPEX

MPEX is an alternative high-quality algorithm.

You can choose between the following quality settings:

MPEX – Preview Quality

For preview purposes.

MPEX – Mix Fast

A very fast mode for preview. This mode works best with composite music signals (mono or stereo material).

MPEX – Solo Fast

For single instruments (monophonic material) and voice.

MPEX – Solo Musical

Higher quality for single instruments (monophonic material) and voice.

MPEX – Poly Fast

For monophonic and polyphonic material. This is the fastest setting that gives still very good results. You can use this for drum loops, mixes, chords.

MPEX – Poly Musical

For monophonic and polyphonic material. This is the recommended MPEX quality setting. You can use this for drum loops, mixes, or chords.

MPEX – Poly Complex

For difficult material or for stretch factors above 1.3. This high quality setting is quite CPU-intensive.

NOTE

When applying the **Pitch Shift** process, you can choose between the regular setting and a setting where the formants are preserved for each quality setting.

Standard

The **Standard** algorithm is optimized for CPU efficient realtime processing.

The following presets are available:

Standard – Drums

For percussive sounds. This mode does not change the timing of your audio. If you use it with certain tuned percussion instruments, you may experience audible artifacts. In this case, try the **Mix** mode as an alternative.

Standard – Plucked

For audio with transients and a relatively stable spectral sound character like plucked instruments.

Standard – Pads

For pitched audio with slower rhythm and a stable spectral sound character. This minimizes sound artifacts, but the rhythmic accuracy is not preserved.

Standard – Vocals

For slower signals with transients and a prominent tonal character like vocals.

Standard – Mix

For pitched material with a less homogenous sound character. This mode preserves the rhythm and minimizes the artifacts.

Standard – Custom

Allows you to set the time stretching parameters manually.

Standard – Solo

For monophonic material like solo woodwind/brass instruments or solo vocals, monophonic synths or string instruments that do not play harmonies. This mode preserves the timbre of the audio.

Custom Warp Settings

If you select the **Standard – Custom** mode, a dialog opens where you can manually adjust the parameters that govern the sound quality of the time stretching:

Grain size

Allows you to determine the size of the grains in which the standard time-stretching algorithm splits the audio. Low grain size values lead to good results for material that has many transients.

Overlap

This is the percentage of the whole grain that will overlap with other grains. Use higher values for material with a stable sound character.

Variance

This is a percentage of the whole length of the grains, and sets a variation in positioning so that the overlapping area sounds smooth. A variance setting of 0

produces a sound akin to time stretching used in early samplers, whereas higher settings produce more rhythmic smearing effects but less audio artifacts.

Limitations

Applying time stretching or pitch shifting to audio material can lead to a degradation in audio quality and to audible artifacts. The result depends on the source material, the particular stretch and pitch operations applied, and the selected audio algorithm preset.

As a rule of thumb, smaller changes in pitch or duration cause less degradation. However, there are additional issues one should be aware of when working with time stretching and pitch shifting algorithms.

NOTE

In rare cases, editing warped audio events may cause discontinuities at the edit points. You can then try to move the edit point to a different position or bounce the audio event prior to editing.

Reverse Playback and Scrubbing

Most of the algorithms used for time stretching and pitch shifting only support forward playback. Reverse playback or scrubbing of warped audio events can lead to recurring artifacts in playback.

Pitch and Stretch Factor

Some algorithms may put limitations on the maximum degree of time stretching or pitch shifting supported. However, with elastique version 3 there are no limitations.

Rendering to Audio

You can render existing material to new audio material.

You can render the following:

- Audio tracks
- Instrument tracks
- Audio events or parts on audio tracks
- MIDI parts on instrument tracks
- Range selections on audio or instrument tracks
- Range selections on multiple audio or instrument tracks

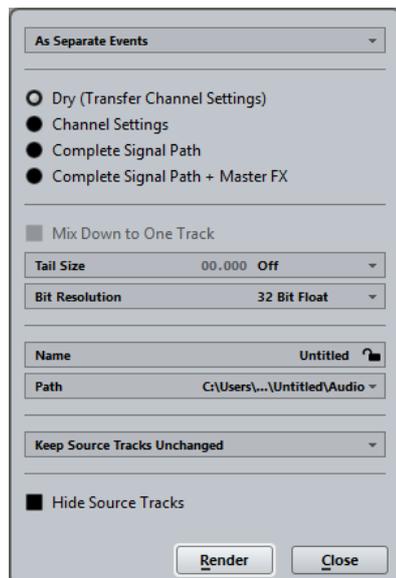
IMPORTANT

The rendering function does not support side-chain routing.

Render Tracks

The **Render Tracks** dialog allows you to customize the track render settings.

To open the **Render Tracks** dialog, select one or more audio tracks, instrument tracks, or MIDI tracks, and select **Edit > Render in Place > Render Settings**.



The following settings are available:

As Separate Events

One or more tracks are created. These contain separate events or parts that are saved as separate audio files.

As Block Events

One or more tracks are created. These contain adjacent events/parts that are combined to blocks. Every block is saved as a separate audio file.

As One Event

One or more tracks are created. These contain the events/parts that are combined to one event/part. Every combination is saved as a separate audio file.

Dry (Transfer Channel Settings)

If this option is activated, all effects and panner settings are not rendered into the new audio file but copied to new audio tracks.

Channel Settings

If this option is activated, all effects are rendered into the resulting audio files. This includes insert effects, channel strip settings, group channel settings, or FX send channel settings. Panner settings are transferred to the new audio tracks.

Complete Signal Path

If this option is activated, the complete signal path is rendered into the new audio files, including all channel settings, group channel settings, FX send channel settings and panner settings. The new audio track is created without effects. Stereo balance panner settings are activated.

Complete Signal Path + Master FX

If this option is activated, the complete signal path and the master bus settings are rendered into the resulting audio files. This includes all channel settings, group channel settings, FX send channel settings, and panner settings.

NOTE

- For the render options **Dry (Transfer Channel Settings)** and **Channel Settings**, the resulting audio tracks keep the formats of their source tracks. A mono track results in a mono track.
- For the render options **Complete Signal Path** and **Complete Signal Path + Master FX**, the resulting audio file format is determined by the output channel of the source track. A mono track that is routed to a stereo bus results in stereo audio files.

Mix Down to One Track

By default, rendering multiple tracks or selections from multiple tracks at once results in multiple new audio tracks. To create one resulting audio track from all your source material, activate the **Mix Down to One Track** option.

The **Mix Down to One Track** option is not available if the following applies:

- The render option **Dry (Transfer Channel Settings)** is selected.
- Only one track with one output channel is selected.
- The channels that you want to mix down are routed to different targets.
- One of the channels has a send.
- One track with multiple outputs and either **Dry (Transfer Channel Settings)**, **Complete Signal Path**, or **Complete Signal Path + Master FX** are selected.

Tail Size

Allows you to set a tail size in seconds or bars and beats for the rendered files. This adds time at the end of the rendered file to allow reverb and delay tails to fully fade out.

Bit Resolution

Allows you to set the bit resolution for the resulting material to 16 bit, 24 bit, or 32 bit float.

Name

Allows you to enter a custom name for the rendered files. To do this, unlock this option by clicking the lock icon.

Path

Allows you to select a custom folder to which the resulting `.wav` files are rendered.

From the pop-up menu, select what happens with the source tracks after rendering. The following options are available:

Keep Source Tracks Unchanged

If this option is selected, the source tracks remain unchanged.

Mute Source Tracks

If this option is selected, the source tracks are automatically muted.

Disable Source Tracks

If this option is selected, the source tracks are disabled and are therefore no longer processed. This option releases CPU and RAM resources and is therefore similar to the **Freeze** function. To re-enable the tracks, right-click the disabled track to open the context menu and select **Enable Track**.

Remove Source Tracks

If this option is selected, the source tracks are removed from the track list.

Hide Source Tracks

If this option is activated, the source tracks are hidden after rendering. To show the source tracks again, select the **Visibility** tab in the **Project** window and select the track that you want to show.

RELATED LINKS

[Setting Pan](#) on page 317

Rendering Tracks

You can render selected tracks either via the **Render Tracks** dialog or by directly using the **Render (with Current Settings)** command.

PROCEDURE

1. Select one or more audio, MIDI, or instrument tracks.
 2. Select **Edit > Render in Place > Render Settings**.
 3. Specify the render options.
 4. Click **Render**.
-

RESULT

All selected source material is processed according to your render settings. Your render options are saved and used for all further render operations.

NOTE

You can also start the rendering operation directly by selecting **Edit > Render in Place > Render (with Current Settings)**.

Render Selection

You can render selections of audio events and/or MIDI parts with default settings or with customized settings. The **Render Selection** dialog allows you to customize the selection render settings.



The following settings are available:

As Separate Events

One or more tracks are created. These contain separate events or parts that are saved as separate audio files.

As Block Events

One or more tracks are created. These contain adjacent events/parts that are combined to blocks. Every block is saved as a separate audio file.

As One Event

One or more tracks are created. These contain the events/parts that are combined to one event/part. Every combination is saved as a separate audio file.

Dry (Transfer Channel Settings)

If this option is activated, all effects and panner settings are copied to the rendered new audio tracks.

Channel Settings

If this option is activated, all effects are rendered into the resulting audio files. This includes insert effects, channel strip settings, group channel settings, or FX send channel settings. Panner settings are transferred to the new audio tracks.

Complete Signal Path

If this option is activated, the complete signal path is rendered into the new audio files, including all channel settings, group channel settings, FX send channel settings and panner settings. The new audio track is created without effects. Stereo balance panner settings are activated.

Complete Signal Path + Master FX

If this option is activated, the complete signal path and the master bus settings are rendered into the resulting audio files. This includes all channel settings, group channel settings, FX send channel settings, and panner settings.

Mix Down to One Track

By default, rendering multiple tracks or selections from multiple tracks at once results in multiple new audio tracks. To create one resulting audio track from all your source material, activate the **Mix Down to One Track** option.

The **Mix Down to One Track** option is not available if the following applies:

- The render option **Dry (Transfer Channel Settings)** is selected.
- Only one track with one output channel is selected.
- The channels that you want to mix down are routed to different targets.
- One of the channels has a send.
- One track with multiple outputs and either **Dry (Transfer Channel Settings)**, **Complete Signal Path**, or **Complete Signal Path + Master FX** are selected.

Tail Size

Allows you to set a tail size in seconds or bars and beats for the rendered files. This adds time at the end of the rendered file to allow reverb and delay tails to fully fade out.

Bit Resolution

Allows you to set the bit resolution for the resulting material to 16 bit, 24 bit, or 32 bit float.

Name

Allows you to enter a custom name for the rendered files. To do this, unlock this option by clicking the lock icon.

Path

Allows you to select a custom folder to which the resulting `.wav` files are rendered.

Keep Source Events Unchanged

If this option is selected, the source events remain unchanged.

Mute Source Events

If this option is selected, the source events are automatically muted.

Dry (Transfer Channel Settings)

If this option is activated, all effects and panner settings are copied to new audio tracks.

From the pop-up menu, select what happens with the source tracks after rendering. The following options are available:

Keep Source Events Unchanged

If this option is selected, the source events remain unchanged.

Mute Source Events

If this option is selected, the source events are automatically muted.

Rendering Selections

You can render selections of audio events and/or MIDI parts via the **Render Selection** dialog.

PROCEDURE

1. Select one or more audio events and/or MIDI parts or make a range selection.
 2. Select **Edit > Render in Place > Render Settings**.
 3. In the **Render Selection** dialog, specify the render options.
 4. Click **Render**.
-

RESULT

All selected source material is processed according to your render settings. Your render options are saved and used for all further render operations.

NOTE

You can also start rendering operation directly by selecting **Edit > Render in Place > Render (with Current Settings)**.

Sample Editor

The **Sample Editor** provides an overview of the selected audio event. It allows you to view and edit audio by cutting and pasting, removing, or drawing audio data, and by processing audio. Editing is non-destructive so that you can undo modifications at any time.

You can open the **Sample Editor** in a separate window or in the lower zone of the **Project** window. This is useful, if you want to access the **Sample Editor** functions from within a fixed zone of the **Project** window.

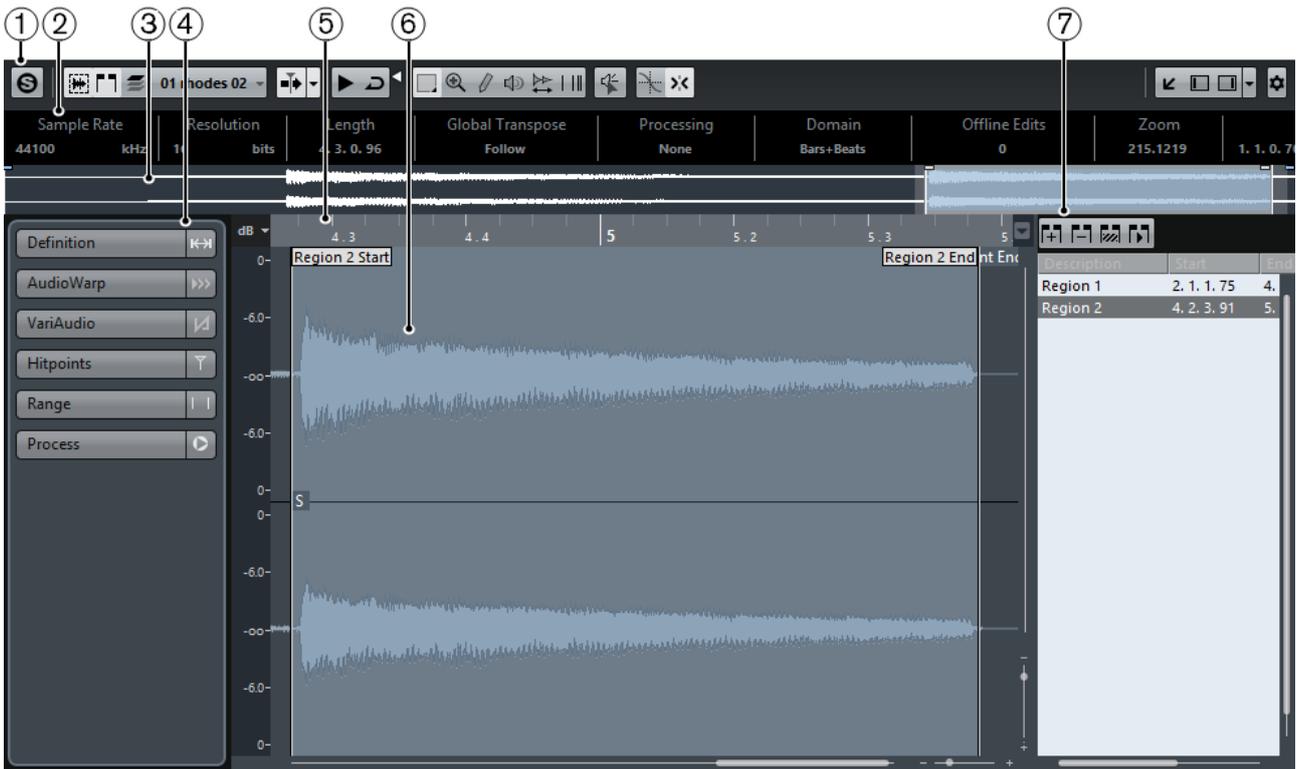
To open an audio event in the **Sample Editor**, do one of the following:

- Double-click an event in the **Project** window.
- Select an event in the **Project** window and press **Return** or **Ctrl/Cmd-E**.
- Select an event in the **Project** window and select **Audio > Open Sample Editor**.
- In the **Key Commands dialog** in the **Editors** category, assign a key command for **Open Sample Editor**. Select an event in the **Project** window and use the key command.

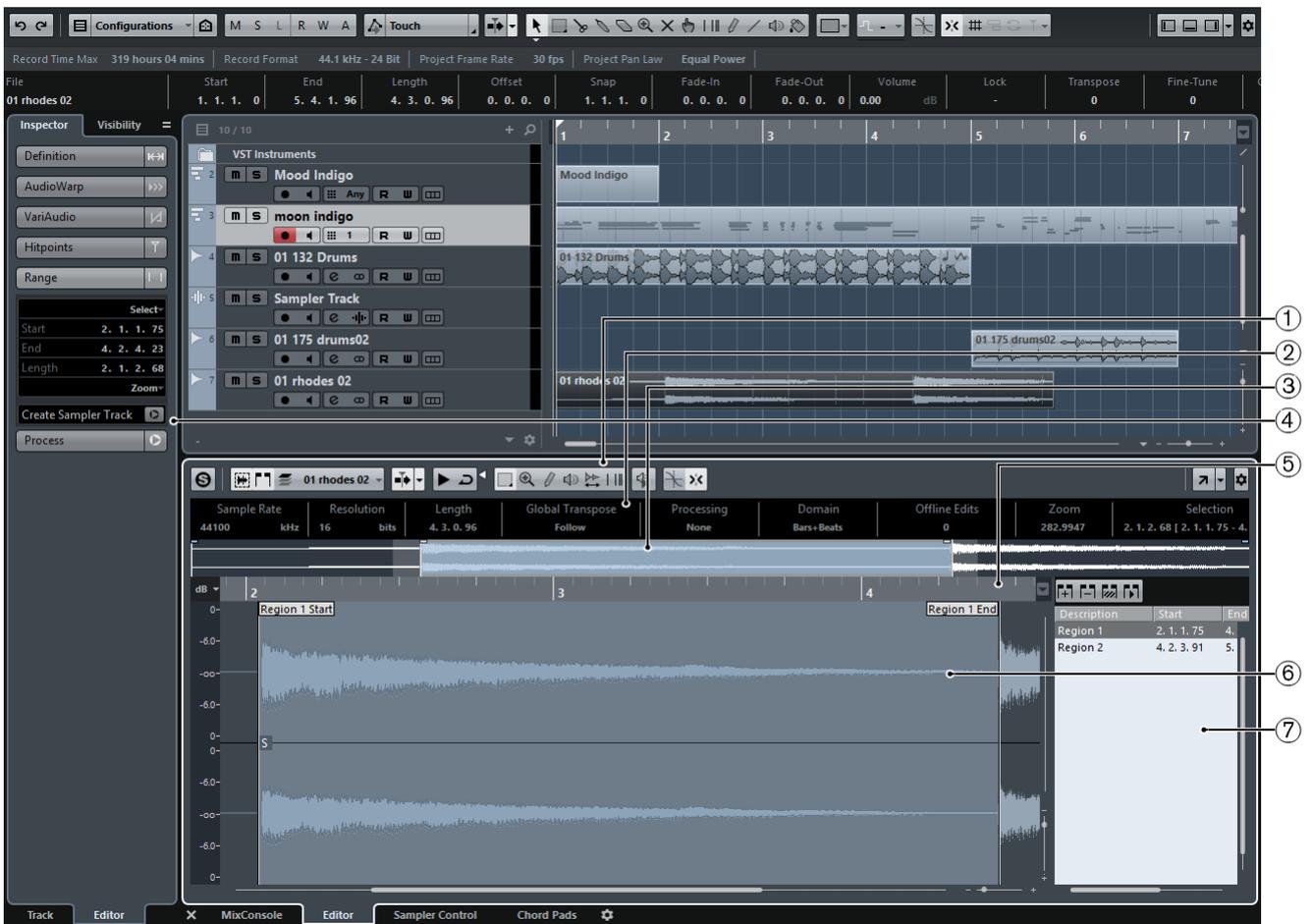
NOTE

If you select **Audio > Set up Editor Preferences**, the **Preferences** dialog opens on the **Editors** page. Make your settings to specify, if you want the **Sample Editor** to open in a separate window or in the lower zone of the **Project** window.

Sample Editor



Sample Editor Window



Sample Editor in Lower Zone

The **Sample Editor** is divided into several sections:

1. **Toolbar**
Contains tools for selecting, manipulating, and playing back audio.
2. **Info Line**
Shows information about the audio.
3. **Overview Line**
Shows an overview of the whole audio clip and indicates which part of the clip is shown in the waveform display.
4. **Inspector**
Contains audio editing tools and functions.

NOTE

The **Editor Inspector** for the lower zone editor is shown in the left zone of the **Project** window.

5. **Ruler**
Shows the timeline and the display format of the project.
6. **Waveform Display**
Shows the waveform image of the edited audio clip.
7. **Regions**
Allows you to add and edit regions.

NOTE

The info line, the overview line, and the regions can be activated/deactivated by clicking **Set up Window Layout** on the toolbar and activating/deactivating the corresponding options.

RELATED LINKS

- [Opening the Editor in the Lower Zone](#) on page 69
- [Opening the Editor Inspector](#) on page 58
- [Toolbar](#) on page 430
- [Info Line](#) on page 435
- [Overview Line](#) on page 435
- [Sample Editor Inspector](#) on page 436
- [Ruler](#) on page 438
- [Waveform Display](#) on page 439
- [Regions List](#) on page 444

Toolbar

The toolbar contains tools for selecting, editing, and playing back audio.

- To show or hide the toolbar elements, right-click the toolbar and activate or deactivate the elements.

The following options are available:

Static Buttons

Solo Editor



Solos the selected audio during playback.

Left Divider

Left Divider



Allows you to use the left divider. Tools that are placed to the left of the divider are always shown.

View Options

Show Audio Event



Highlights the section corresponding to the edited event in the waveform display and the overview line.

NOTE

This button is not available if you opened the audio event from the **Pool**. You can adjust the start and end of the event in the clip by dragging the event handles in the waveform display.

Show Regions



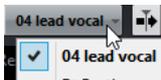
Opens a section where you can view and edit regions.

Edit Active Audio Event Only (Cubase Pro only)



Restricts editing operations to the active audio event.

Currently Edited Audio Event



Lists all audio events that are opened in the **Sample Editor**, and allows you to activate an audio event for editing.

Auto-Scroll

Auto-Scroll



Keeps the project cursor visible during playback. The **Switch Auto-Scroll Settings** pop-up menu allows you to activate **Page Scroll** or **Stationary Cursor** and to activate **Suspend Auto-Scroll when Editing**.

Preview

Audition



Plays back the edited audio. **Audition Loop** loops the playback until you deactivate the **Audition** icon. The **Audition Volume** slider allows you to adjust the volume.

Tool Buttons

Range Selection



Allows you to select ranges.

Zoom



Allows you to zoom in the waveform display. To zoom out, hold **Alt** while clicking.

Draw



Allows you to edit audio.

Play



Allows you to play back the clip from the position where you click until you release the mouse button.

Scrub



Allows you to locate positions.

Time Warp (Cubase Pro only)



Allows you to drag a musical position to a certain position in time.

Acoustic Feedback

Acoustic Pitch Feedback (Cubase Pro only)



Automatically plays back a VariAudio segment when you modify the pitch.

Snap

Snap to Zero Crossings



Restricts editing to zero crossings, that is, positions where the amplitude is zero.

Snap



Restricts horizontal movement and positioning to certain positions.

Musical Information

Musical Mode



Locks audio clips to the project tempo by using realtime time stretching.

Musical Information



Displays the estimated length of your audio file, the estimated tempo, the time signature, and the warp algorithm. These values are important for using **Musical Mode**.

VariAudio Segment Colors

VariAudio Segment Colors



Allows you to select a color scheme for VariAudio segments. This makes it easier to see which segments belong to which event when working with several audio events.

Right Divider

Right Divider



Allows you to use the right divider. Tools that are placed to the right of the divider are always shown.

Window Zone Controls

Open in Separate Window



This button is available in the lower zone editor. It opens the editor in a separate window.

Open in Lower Zone



This button is available in the editor window. It opens the editor in the lower zone of the **Project** window.

Set up Window Layout



Allows you to activate/deactivate the info line, the overview line, and the regions.

Set up Toolbar



Opens a pop-up menu where you can set up which toolbar elements are visible.

RELATED LINKS

[Auto-Scroll](#) on page 215

[Suspend Auto-Scroll when Editing](#) on page 215

Locating Positions with the Scrub Tool

The Scrub tool allows you to locate positions in the audio.

PROCEDURE

1. On the toolbar, activate the **Scrub** tool.

2. Click in the waveform display and keep the mouse button pressed.
The project cursor moves to the position where you clicked.
 3. Drag to the left or right.
-

RESULT

The audio is played back, and you can hear at which position the cursor is located.

NOTE

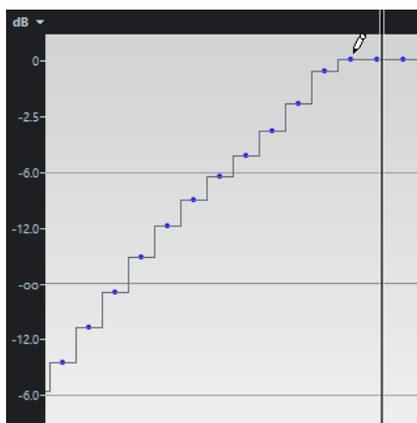
You can determine the speed and pitch of the playback by dragging faster or slower.

Editing Audio Samples with the Draw Tool

You can edit the audio clip at sample level with the **Draw** tool. This way, you can remove audio clicks manually, for example.

PROCEDURE

1. On the audio waveform, locate the sample position that you want to edit and zoom in to the lowest zoom level.
2. Select the **Draw** tool.



3. Click at the beginning of the section that you want to correct and draw in the new curve.
-

RESULT

A range selection covering the edited section is automatically applied.



NOTE

Cubase Pro only: The **Draw** tool cannot be used when the **VariAudio** section is open.

Info Line

The info line shows information about the audio clip, such as the audio format and the selection range.

Sample Rate 44100 kHz	Resolution 24 bits	Length 9.0.0.0	Global Transpose Follow	Processing None	Domain Bars+Beats	Offline Edits 0
Zoom 1045.3907	Selection 0.2.1.43 [3.1.1.89 - 3.3.3.12]	Current Pitch -	Original Pitch -			

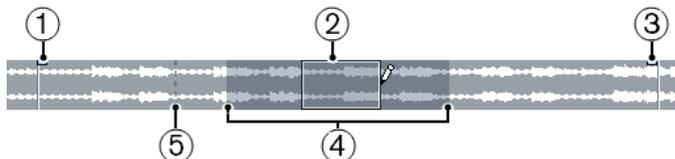
- To show or hide the info line, click **Set up Window Layout** on the toolbar and activate or deactivate the **Info Line** option.
The on/off status of the info line in the **Sample Editor** window and in the lower zone editor are independent of each other.

NOTE

Initially, length and position values are displayed in the format specified in the **Project Setup** dialog.

Overview Line

The overview line displays the whole clip, and indicates which part of the clip is shown in the waveform display.



- To show or hide the overview line, click **Set up Window Layout** on the toolbar and activate or deactivate the **Overview Line** option.
The on/off status of the overview line in the **Sample Editor** window and in the lower zone editor are independent of each other.
- Event Start**
Shows the start of the audio event if **Show Audio Event** is activated on the toolbar.
 - Selection**
Shows which section is selected in the waveform display.
 - Event End**
Shows the end of the audio event if **Show Audio Event** is activated on the toolbar.
 - Waveform display**
Shows the section of the audio that is displayed in the waveform display.
 - You can specify which section of the audio is shown by clicking in the lower half of this display and dragging to the left or right.
 - You can zoom in or out horizontally by dragging the left or right edge of this display.
 - You can show a different section of the audio by clicking in the upper half of this display and dragging a rectangle.
 - Snap Point**

Shows the start of the audio event if **Show Audio Event** is activated on the toolbar.

Sample Editor Inspector

The **Inspector** shows controls and parameters that allow you to edit the audio event that is opened in the **Sample Editor**.

- In the **Sample Editor** window you can show or hide the **Inspector** by clicking **Set up Window Layout** on the toolbar and activating or deactivating **Inspector**.

NOTE

In the lower zone editor, the **Inspector** is always shown in the left zone of the **Project** window.

- To open or close the **Inspector** sections, click their names.



RELATED LINKS

[Opening the Editor Inspector](#) on page 58

Definition

The **Definition** section allows you to adjust the audio grid and define the musical context of your audio. You can use the available functions to match an audio file or audio loop to the project tempo.

- To open the **Definition** section, click its tab in the **Inspector**.



AudioWarp

The **AudioWarp** section allows you to perform timing settings for your audio. This includes applying **Swing** and manually changing the rhythm of the audio by dragging beats to time positions on the grid.

- To open the **AudioWarp** section, click its tab in the **Inspector**.



VariAudio (Cubase Pro only)

The **VariAudio** section allows you to edit single notes of your audio file and change their pitch or timing. Furthermore, you can extract MIDI from your audio.

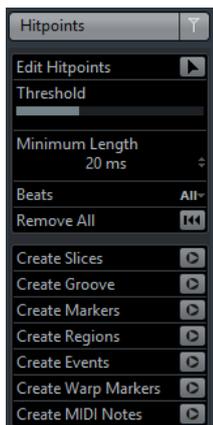
- To open the **VariAudio** section, click its tab in the **Inspector**.



Hitpoints

The **Hitpoints** section allows you to edit hitpoints to slice your audio. Here you can create groove quantize maps, markers, regions, events, and warp markers based on hitpoints.

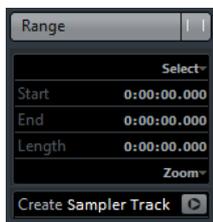
- To open the **Hitpoints** section, click its tab in the **Inspector**.



Range

The **Range** section allows you to edit ranges and selections or create a sampler track from the selected range.

- To open the **Range** section, click its tab in the **Inspector**.



Select

Opens a menu with functions to select ranges.

Start

Shows the start position of the selection range.

End

Shows the end position of the selection range.

Length

Shows the length of the selection range.

Zoom

Opens a menu with the zoom functions for ranges.

Create Sampler Track

Allows you to create a sampler track from the range selection.

Process

The **Process** section regroups the most important audio editing commands from the **Audio** and **Edit** menus.

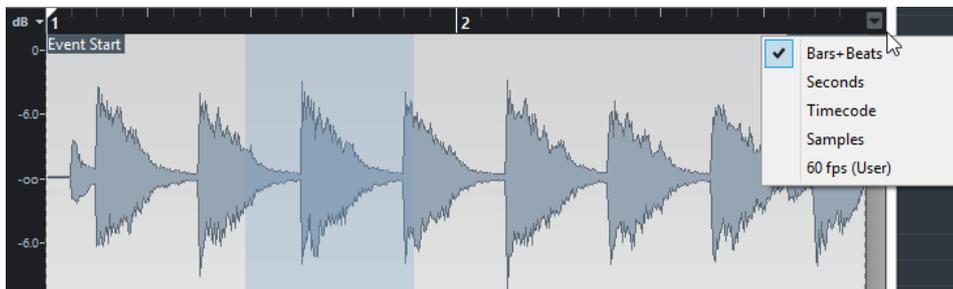
- To open the **Process** section, click its tab in the **Inspector**.



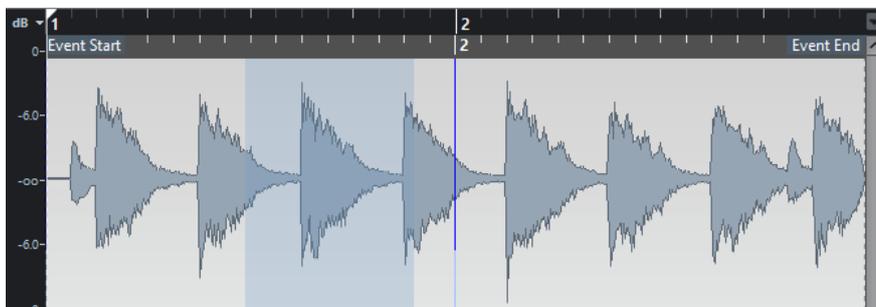
Ruler

The ruler shows the timeline and display format of the project, the project tempo grid.

The ruler is located above the waveform display. It is always shown.

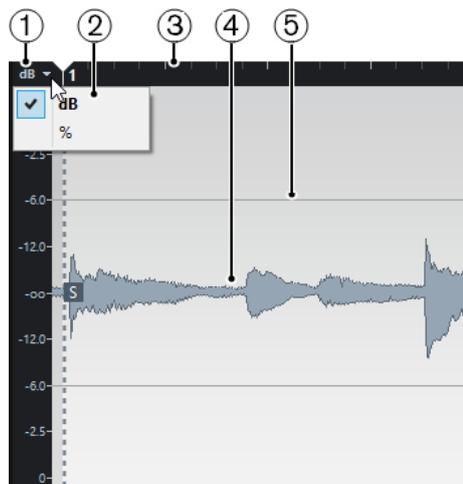


When the **Definition** section is open, an additional ruler is shown below the project tempo grid. It displays the musical structure of the audio file, the audio tempo grid.



Waveform Display

The waveform display shows the waveform image of the edited audio clip.



- 1. Level Scale**
Indicates the amplitude of the audio.
- 2. Level Scale options**
Allow you to select whether the level is shown as percentage or in dB.
- 3. Ruler**
Shows the project tempo grid.
- 4. Audio waveform**
Shows the waveform image of the selected audio.
- 5. Half Level Axis**
To show the half level axis, open the audio waveform context menu and select **Show Half Level Axis**.

NOTE

To set up a wave image style open the **Preferences** dialog and select **Event Display > Audio**.

Zooming in the Waveform

You can zoom in the waveform according to the standard zoom techniques.

The following applies:

- The vertical zoom slider changes the vertical scale relative to the height of the **Sample Control**.
- The vertical zoom is also affected if **Zoom Tool Standard Mode: Horizontal Zooming only** is deactivated in the **Preferences** dialog (**Editing-Tools**) and you drag a rectangle with the **Zoom** tool.
- You can zoom in by holding down **Alt** while drawing a selection rectangle around the segments that you want to zoom in on. You can zoom out by holding down **Alt** and clicking in an empty area of the waveform.
- The current zoom setting is shown on the info line as samples per pixel.

NOTE

You can zoom in horizontally to a scale of less than one sample per pixel. This is required for drawing with the **Draw** tool.

- If you have zoomed in to one sample per pixel or less, the appearance of the samples depends on the **Interpolate Audio Waveforms** option in the **Preferences** dialog (**Event Display-Audio**).

Zoom Submenu

The **Zoom** submenu of the **Edit** menu contains options for zooming in the **Sample Editor**.

- To open the **Zoom** submenu, select **Edit > Zoom**.

The following options are available:

Zoom In

Zooms in one step, centering on the project cursor.

Zoom Out

Zooms out one step, centering on the project cursor.

Zoom Full

Zooms out so that the whole clip is visible in the waveform display.

Zoom to Selection

Zooms in horizontally and vertically so that the current selection fills the waveform display.

Zoom to Selection (Horiz.)

Zooms in horizontally so that the current selection fills the waveform display.

Zoom to Event

Zooms in so that the waveform display shows the section of the clip corresponding to the edited audio event. This is not available if you have opened the **Sample Editor** from the **Pool**.

Zoom In Vertically

Zooms in one step vertically.

Zoom Out Vertically

Zooms out one step vertically.

Undo/Redo Zoom

Allows you to undo/redo the last zoom operation.

Range Editing

In the **Sample Editor** you can edit selection ranges. This option is useful if you want to quickly edit or process a specific section in the audio waveform, or if you want to create a new event or clip.

You can only select one range at a time. The selection is indicated in the **Selection** field on the **Info Line**.

The **Range** section in the **Inspector** contains functions for working with regions.

RELATED LINKS

[Range](#) on page 437

[Shared Copies](#) on page 197

Selecting a Range

PREREQUISITE

Snap to Zero Crossings is activated on the toolbar. This option ensures that the start and the end of the selection are always at zero crossings.

PROCEDURE

1. On the toolbar, activate the **Range Selection** tool.
2. Click at the position in the waveform display where you want the range to start and drag to the position, where you want the range to end.
3. Optional: Perform one of the following actions to resize the selection range:
 - Drag the left or the right edge of the selection to a new position.
 - Hold down **Shift** and click at a new position.

RESULT

The selected range is highlighted in the waveform display.

NOTE

You can also use the functions in the **Select** menu to select ranges.

RELATED LINKS

[Select Menu](#) on page 441

Select Menu

Select Menu in the Range Section

On the **Select** menu in the **Range** section in the **Sample Editor** Inspector, the following functions are available:

Select All

Selects the whole clip.

Select None

Deselects everything.

Select in Loop

Selects the audio between the left and the right locator.

Select Event

Selects only the audio that is included in the edited event. Cubase Pro only: If the **VariAudio** section is open and you segmented the audio, all segments that start or end within the event boundaries are selected.

Locators to Selection

Sets the locators to encompass the current selection. This option is available if you have selected one or several events or made a selection range.

Locate Selection

Moves the project cursor to the beginning or end of the current selection. This option is available if you have selected one or several events or made a selection range.

Loop Selection

Activates playback from the start of the selection and keeps starting over again at the selection end.

Select Menu on the Edit Menu

If you select **Edit > Select**, the following functions are available:

All

Selects the whole clip.

None

Deselects everything.

In Loop

Sets the audio between the left and the right locators.

From Start to Cursor

Selects the audio between the clips start and the project cursor.

From Cursor to End

Selects the audio between the project cursor and the end of the clip. This option is available if the project cursor is positioned between the clip boundaries.

Equal Pitch - all Octaves/same Octave (Cubase Pro only)

Selects all notes that have the same pitch as the selected note, in any octave or in the current octave. This option is available if the **VariAudio** section is open and the **Pitch & Warp** tool is activated.

Left Selection Side to Cursor

Moves the left side of the selection range to the project cursor position. This option is available if the project cursor is positioned between the clip boundaries.

Right Selection Side to Cursor

Moves the right side of the selection range to the project cursor position or the end of the clip if the project cursor is positioned to the right of the clip.

Creating Events from Selection Ranges

You can create a new event that contains only the selected range.

PROCEDURE

1. Select a range.
2. Drag the selection range to an audio track in the **Project** window.

RELATED LINKS

[Selecting a Range](#) on page 441

Creating Clips from Selection Ranges

You can create a new clip that contains only the selected range.

PROCEDURE

1. Select a range.
2. Right-click the selected range and select **Audio > Bounce Selection**.
3. Perform one of the following actions:
 - Click **Replace** if you want to replace the original.
 - Click **No** if you want to keep the original.

RESULT

A new **Sample Editor** window opens with the new clip. It refers to the same audio file as the original clip, but it contains the audio corresponding to the selection range only.

Creating Sampler Tracks from Selection Ranges

You can create a sampler track that contains only the selected range.

PROCEDURE

1. Select a range.
If you select no range, the event Start/End is used.
2. Open the **Range** inspector tab.
3. Click **Create Sampler Track** .

RESULT

A new **Sampler Track** is created and added to the track list. The new sampler track contains your range selection.

Edit Functions for Ranges

You can edit selection ranges.

- To edit a selection range, open the **Process** section in the **Sample Editor**, and select one of the **Edit** menu functions.

NOTE

If you edit ranges of events that are shared copies, you are asked whether you want to create a new version of the clip. Select **New Version** if you want to edit the event, select **Continue** if all shared copies should be edited.

The following options are available:

Cut

Cuts the selected range from the clip and saves it in the clipboard. The section to the right of the range is moved to the left to fill the gap.

Copy

Copies the selected range to the clipboard.

Paste

Replaces the selected range with the data from the clipboard.

Delete

Removes the selected range from the clip. The section to the right of the range is moved to the left to fill the gap.

Insert Silence

Inserts a silent section with the same length as the current range selection at the selection start. The selected range is not replaced, but moved to the right.

Event or Range as Region

Creates a region from the selected range.

RELATED LINKS

[Shared Copies](#) on page 197

Processes and Plug-Ins for Ranges

You can apply processes and plug-ins to selection ranges.

- To apply a process or a plug-in to a selection range, open the **Process** section in the **Sample Editor**, and select one of the functions in the **Select Process** menu or in the **Select Plug-in** menu.

NOTE

If you apply processes or plug-ins to ranges of events that are shared copies, you are asked whether you want to create a new version of the clip. Select **New Version** if you want to edit the event, select **Continue** if all shared copies should be edited.

RELATED LINKS

[Audio Processing and Functions](#) on page 397

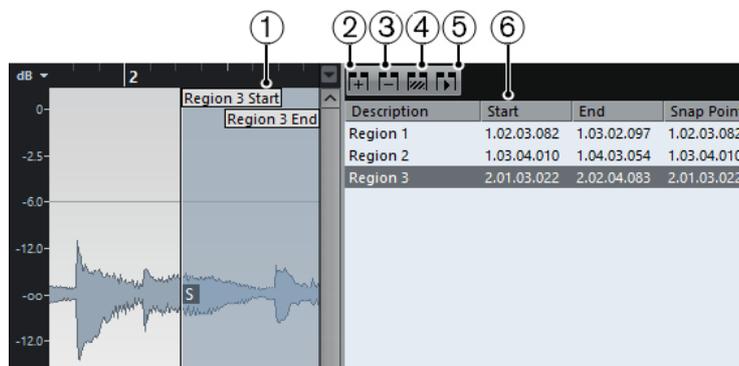
[Applying Plug-Ins \(Cubase Pro only\)](#) on page 409

[Shared Copies](#) on page 197

Regions List

Regions are sections within an audio clip that allow you to mark important sections in the audio. You can add and edit regions for the selected audio clip in the regions zone.

- To show or hide the **Regions**, click **Set up Window Layout** on the toolbar and activate or deactivate **Regions**.



The following controls are available:

- 1. Region Start/Region End**
Shows the start and end of the region in the audio waveform.
- 2. Add Region**
Allows you to create a region of the current range selection.
- 3. Remove Region**
Allows you to remove the selected region.
- 4. Select Region**
If you select a region in the list and click this button above, the corresponding section of the audio clip is selected (as if you had selected it with the **Range Selection** tool) and zoomed. This is useful if you want to apply processing to the region only.
- 5. Play Region**
Plays back the selected region.
- 6. Regions list**
Allows you to select and display regions in the audio waveform.

Creating Regions

PREREQUISITE

You have clicked **Set up Window Layout** on the toolbar and activated the **Regions** option.

PROCEDURE

- On the **Sample Editor** toolbar, activate the **Range Selection** tool and in the waveform display, select the range that you want to convert into a region.
 - Perform one of the following actions:
 - Above the regions list, click **Add Region**.
 - Select **Audio > Advanced > Event or Range as Region**.A region is created, corresponding to the selected range.
 - Optional: Double-click the region name in the list and enter a new name.
-

RESULT

The region is added to the regions list.

AFTER COMPLETING THIS TASK

Click the region in the regions list to instantly display it in the **Sample Editor**.

RELATED LINKS

[Creating Regions](#) on page 455

Creating Regions from Hitpoints

You can create regions from hitpoints. This is useful to isolate specific sounds.

PREREQUISITE

The audio event from which you want to create regions is opened in the **Sample Editor** and the hitpoints are set at the correct positions.

PROCEDURE

- In the **Hitpoints** section, click **Create Regions**.
-

RESULT

Regions are created between two hitpoint positions and shown in the **Sample Editor**.

Adjusting Start and End Positions of Regions

PREREQUISITE

You have clicked **Set up Window Layout** on the toolbar and activated the **Regions** option. You have created regions.

PROCEDURE

- Perform one of the following actions:
 - Drag the **Region Start** or **Region End** handle in the waveform display.
 - Double-click the **Start** or **End** field in the regions list and enter a new value.

NOTE

The positions are shown in the display format selected for the ruler and info line, but are relative to the start of the audio clip.

Removing Regions

PREREQUISITE

You have clicked **Set up Window Layout** on the toolbar and activated the **Regions** option. You have created regions.

PROCEDURE

1. In the regions list, select the region that you want to remove.
2. Above the regions list, click **Remove Region**.

RESULT

The region is removed from the regions list.

Creating Audio Events from Regions

You can create new audio events from regions using drag and drop.

PREREQUISITE

You have clicked **Set up Window Layout** on the toolbar and activated the **Regions** option. You have created regions.

PROCEDURE

1. Select the region in the regions list.
2. Drag the region to the desired position in the **Project** window.

RESULT

An event is created from the region.

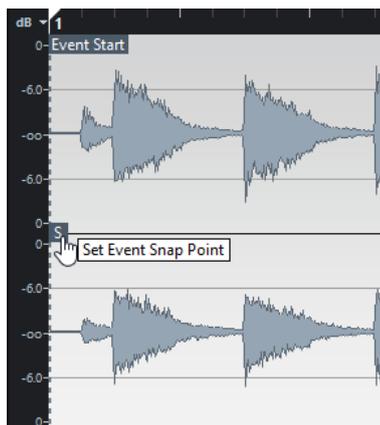
Snap Point

The snap point is a marker within an audio event that can be used as a reference position.

- To show the snap point, activate **Show Audio Event** on the toolbar.



The snap point is set at the audio event start. But you can move it to another relevant position in the audio.



The snap point is used when **Snap** is activated on the **Project** window toolbar and you insert a clip from the **Sample Editor** in the event display. It is also used when you move or copy events in the event display.

In the **Sample Editor**, you can edit the following snap points:

- **Event Snap Point**
This is shown in the **Sample Editor** if you open a clip from within the **Project** window.
- **Clip Snap point**
This is shown in the **Sample Editor** if you open a clip from the **Pool**.

NOTE

The clip snap point serves as a template for the event snap point. However, it is the event snap point that is taken into account when snapping.

IMPORTANT

When you set the grid start in the **Definition** section, the snap point is moved to the grid start.

Adjusting the Snap Point

PREREQUISITE

The audio event is opened in the **Sample Editor** and **Show Audio Event** is activated on the toolbar.

PROCEDURE

1. Optional: On the **Sample Editor** toolbar, select the **Scrub** tool.
This allows you to audition the audio while setting the snap point.

2. Move the mouse pointer over the snap point, and drag it to the desired position in the audio event.
The mouse pointer becomes a hand symbol and a tooltip indicates that you can set the snap point.
-

RESULT

The event snap point is adjusted to the position where you dragged it.



NOTE

You can also adjust the snap point by setting the project cursor at the desired position and selecting **Audio > Snap Point To Cursor**.

Hitpoints

Hitpoints mark musically relevant positions in audio files. Cubase can detect these positions and create hitpoints automatically by analyzing onsets and melodic changes of the audio.

NOTE

All hitpoint operations can be performed in the **Sample Editor** window and in the lower zone editor.

When you add an audio file to your project by recording or by importing, Cubase automatically detects hitpoints. In the **Project** window, hitpoints are shown for the selected event, provided that the zoom factor is high enough.

The hitpoint functions are available in the **Hitpoints** section of the **Sample Editor**.

You can use hitpoints for the following purposes:

- Create slices of the audio
Slices allow you to change tempo and timing of the audio without affecting its pitch and quality, or to replace or extract individual sounds from loops.
- Quantize audio
- Extract the groove from the audio
The timing is extracted from the audio and a groove map is created. You can use this groove map to quantize other events.
- Create markers from the audio
- Create regions from the audio
- Create events from the audio
- Create warp markers from the audio
- Create MIDI notes from the audio

NOTE

Hitpoints work best with drums, rhythmic recordings, or loops.

Calculating Hitpoints

When you add an audio file to your project by recording or by importing, Cubase automatically detects hitpoints.

PROCEDURE

1. Import or record an audio file.
Cubase automatically detects hitpoints.

NOTE

If your audio file is very long, this may take a while.

2. Select the audio event in the **Project** window and make sure the zoom factor is high enough.

RESULT

The calculated hitpoints for the selected event are shown in the **Project** window.

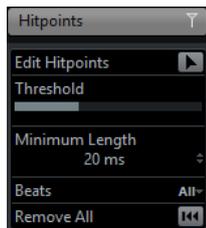
NOTE

You can disable automatic hitpoint detection by selecting **File > Preferences > Editing > Audio** and by deactivating **Enable Automatic Hitpoint Detection**.

Hitpoint Filters

Cubase automatically detects and filters hitpoints. However, you can filter hitpoints manually if the result does not meet your expectations.

- To filter hitpoints, open the audio event in the **Sample Editor** and open the **Hitpoints** section.



Threshold

Filters hitpoints by their peaks. This option allows you to discard hitpoints of quieter crosstalk signals, for example.

Minimum Length

Filters hitpoints by their distance between two hitpoints. This option allows you to avoid creating slices that are too short.

Beats

Filters hitpoints by their musical position. This option allows you to discard hitpoints that do not fit within a certain range of a defined beat value.

Editing Hitpoints Manually

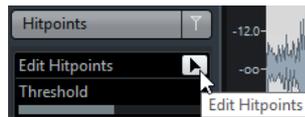
It is absolutely crucial for any further editing that the hitpoints are set at the correct positions. Therefore, if the automatic hitpoint detection does not meet your expectations, you can edit hitpoints manually.

PREREQUISITE

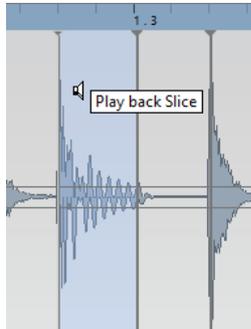
The audio event is opened in the **Sample Editor** and in the **Hitpoints** section hitpoints are filtered by their peaks, by their distance, or by their musical position.

PROCEDURE

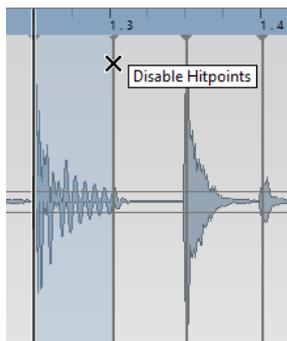
1. In the **Hitpoints** section, activate the **Edit Hitpoints** tool.



2. Move the mouse on the waveform display and click between two hitpoints. The mouse pointer changes to a speaker icon and the tooltip **Play back Slice** is shown. The slice is played back from the beginning to the end.



3. To disable a hitpoint that you do not need, press **Shift** and click on the line that represents the hitpoint. The mouse pointer changes to a cross icon and the tooltip **Disable Hitpoint** is shown. Disabled hitpoints are not taken into account for further operations.



4. Press **Tab** to navigate to the next slice.
5. To insert a hitpoint, press **Alt** and click at the position where you want to insert the hitpoint. The mouse pointer changes to a draw icon and the tooltip **Insert Hitpoint** is shown.
6. To move a hitpoint, move the mouse pointer on the vertical line that represents the hitpoint, and drag to the left or to the right. The mouse pointer changes to a double arrow and the tooltip **Move Hitpoint** is shown. Moved hitpoints are locked by default.
7. To make sure that a hitpoint is not accidentally filtered out, lock it by pointing at it and clicking. The tooltip **Lock Hitpoint** is shown.

RESULT

The hitpoints are edited according to your settings.

NOTE

To reset a hitpoint to its original state, press **Ctrl/Cmd-Alt** until the tooltip **Enable/Unlock Hitpoints** is shown and click.

RELATED LINKS

[Hitpoint Filters](#) on page 450

Locating to Hitpoints in the Project Window

You can navigate through the hitpoints of an audio event in the **Project** window.

PREREQUISITE

Enable Automatic Hitpoint Detection is activated (**File > Preferences > Editing > Audio**).

PROCEDURE

1. Select the audio track that contains the audio event for which you want to locate hitpoints.
2. Perform one of the following actions:
 - Press **Alt-N** to navigate to the next hitpoint.
 - Press **Alt-B** to navigate to the previous hitpoint.

RESULT

The project cursor jumps to the respective hitpoint.

Slices

You can create slices from hitpoints, where each slice ideally represents an individual sound or beat of the audio.

You can use these slices to change tempo and timing of the audio without affecting its pitch and quality.

NOTE

Slices are created in the **Sample Editor** and edited in the **Audio Part Editor**.

Audio that meets the following characteristics is suitable:

- Individual sounds have a noticeable attack.
- The recording quality is good.
- The recording is free of crosstalk signals.
- The audio is free of smearing effects like delays, for example.

Slicing Audio

Slicing audio is useful if you want to change tempo and timing of the audio without affecting its pitch and quality.

PREREQUISITE

The audio event is opened in the **Sample Editor** and the hitpoints are set at the correct positions.

NOTE

When slicing audio, all events referring to the edited clip are also replaced.

PROCEDURE

- Perform one of the following actions:

- In the **Hitpoints** section, click **Create Slices**.
 - Select **Audio > Hitpoints > Create Audio Slices from Hitpoints**.
-

RESULT

The areas between the hitpoints are sliced and become separate events. The original audio event is replaced by an audio part containing the slices.



On playback, the audio plays back seamlessly at the project tempo.

AFTER COMPLETING THIS TASK

Change the project tempo. The slices are moved accordingly, keeping their relative positions within the part.

Double-click the sliced audio part and replace or extract individual slices in the **Audio Part Editor**.

RELATED LINKS

[Slices and the Project Tempo](#) on page 453

Slicing Multi-Track Drum Recordings

You can slice all tracks of a multi-track drum recording at once.

PREREQUISITE

You have created a multi-track drum recording and set up an edit group for all the tracks.

PROCEDURE

- Select the folder track, and select **Audio > Hitpoints > Divide Audio Events at Hitpoints**.
-

RESULT

The audio of all tracks in the folder track is sliced.

RELATED LINKS

[Quantizing Multiple Audio Tracks \(Cubase Pro only\)](#) on page 244

[Group Editing Mode \(Cubase Pro only\)](#) on page 198

Slices and the Project Tempo

The project tempo affects how the sliced audio is played back.

NOTE

To ensure that the loop follows any further tempo changes, set the **Toggle Time Base** button in the track list or Inspector to a musical time base (the button shows a note symbol).

Project Tempo Is Slower Than the Original Audio

If the project tempo is slower than the tempo of the original audio event, there may be audible gaps between the slice events in the part. If this is the case, you have the following options:

- Select **Audio > Advanced > Close Gaps (Timestretch)**.

This applies time stretch to each slice and closes the gaps. Consider activating auto fades for the corresponding audio track. Fade-outs set to 10 ms help eliminate clicks.

- Select **Audio > Advanced > Close Gaps (Crossfade)**.
This applies crossfades to the slices and closes the gaps.

NOTE

If you decide to change the tempo again, undo your actions and use the original, unstretched file.

Project Tempo Is Higher Than the Original Audio

If the project tempo is higher than the tempo of the original audio event, the slice events in the part may overlap.

If this is the case, right-click the track in the track list and from the context menu, select **Auto Fades Settings** to smooth out the sound.

Furthermore, you can select the overlapping events in the part and select **Audio > Advanced > Delete Overlaps**.

RELATED LINKS

[Defining the Track Time Base](#) on page 169

[Making Global Auto Fade Settings](#) on page 266

[Making Auto Fade Settings for Individual Tracks](#) on page 266

Creating a Groove Quantize Map

You can use hitpoints to create a groove quantize map.

PREREQUISITE

The audio event from which you want to extract the timing is opened in the **Sample Editor**, and the hitpoints are set at the correct positions.

PROCEDURE

- In the **Hitpoints** section, click **Create Groove**.
-

RESULT

The groove is extracted from the audio event and automatically selected in the **Quantize Presets** pop-up menu on the **Project** window toolbar.

AFTER COMPLETING THIS TASK

Open the **Quantize Panel** and save the groove as a preset.

Creating Markers

You can create markers at hitpoint positions. This allows you to snap to hitpoint positions.

PREREQUISITE

The audio event from which you want to create markers is opened in the **Sample Editor**, and the hitpoints are set at the correct positions.

PROCEDURE

- In the **Hitpoints** section, click **Create Markers**.
-

RESULT

If your project has no marker track, a marker track is added and activated automatically, and a marker is created at every hitpoint position.

RELATED LINKS

[Markers](#) on page 285

Creating Regions

You can create regions at hitpoint positions. This allows you to isolate recorded sounds.

PREREQUISITE

The audio event from which you want to create regions is opened in the **Sample Editor**, and the hitpoints are set at the correct positions.

PROCEDURE

- In the **Hitpoints** section, click **Create Regions**.
-

RESULT

Regions are created between two hitpoint positions and shown in the **Sample Editor**.

RELATED LINKS

[Creating Regions](#) on page 445

Creating Events

You can create events at hitpoint positions.

PREREQUISITE

The audio event from which you want to create events is opened in the **Sample Editor**, and the hitpoints are set at the correct positions.

PROCEDURE

- In the **Hitpoints** section, click **Create Events**.
-

RESULT

Events are created between two hitpoint positions.

Creating Warp Markers

You can create warp markers at hitpoint positions. This allows you to quantize audio based on hitpoint positions.

PREREQUISITE

The audio event from which you want to create warp markers is opened in the **Sample Editor**, and the hitpoints are set at the correct positions.

PROCEDURE

- In the **Hitpoints** section, click **Create Warp Markers**.
-

RESULT

Warp markers are created at every hitpoint position.

AFTER COMPLETING THIS TASK

Open the **AudioWarp** section to show and edit the warp markers.

RELATED LINKS

[Tempo Matching Audio](#) on page 458

Creating MIDI Notes

You can export hitpoints to a MIDI part containing a MIDI note for each hitpoint. This allows you to double, replace, or enrich drum hits by triggering sounds of a VST instrument.

PREREQUISITE

The audio event from which you want to create MIDI notes is opened in the **Sample Editor**, and the hitpoints are set at the correct positions.

PROCEDURE

1. In the **Hitpoints** section, click **Create MIDI Notes**.
 2. In the **Convert Hitpoints to MIDI Notes** dialog, set up the parameters.
 3. Click **OK**.
-

RESULT

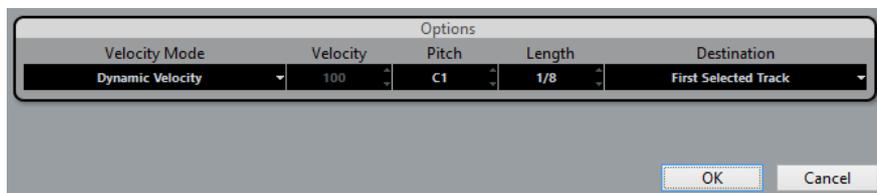
A MIDI track is added to your project, and MIDI notes are created at every hitpoint position.

AFTER COMPLETING THIS TASK

Assign a VST instrument to the MIDI track, and select a sound to enrich the audio.

Convert Hitpoints to MIDI Notes

When exporting hitpoints to MIDI notes, you can specify, how the hitpoints are converted.



The following options are available:

Velocity Mode

Allows you to select a velocity mode:

- If you want the velocity values of the created MIDI notes to vary according to the peak levels of the corresponding hitpoints, select **Dynamic Velocity Value**.
- If you want to assign the same velocity value to all created MIDI notes, select **Fixed Velocity Value**.

Velocity

Sets the **Fixed Velocity Value**.

Pitch

Sets a note pitch for all created MIDI notes.

Length

Sets a note length for all created MIDI notes.

Destination

Allows you to select a destination:

- To place the MIDI part on the first selected MIDI or instrument track, select **First Selected Track**.

NOTE

Any MIDI parts from previous conversions on this track will be deleted.

- To create a new MIDI track for the MIDI part, select **New MIDI Track**.
- To copy the MIDI part to the clipboard, select **Project Clipboard**.

Tempo Matching Audio

In this chapter, warping, that is, tempo or time correction of audio by realtime time stretching is described.

NOTE

All tempo matching operations can be performed in the **Sample Editor** window and in the lower zone editor.

The following functions are described:

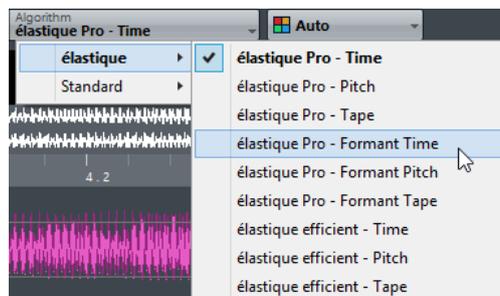
- **Stretch to Project Tempo**
Stretches the selected event to match the project tempo.
- **Musical Mode**
Applies realtime time stretching to audio clips, so that they match the project tempo.
- **Auto Adjust**
Extracts a definition grid from your audio. After that, you can match the audio with the project tempo by using **Musical Mode**.
- **Manual Adjust**
Allows you to manually modify the grid and tempo of your audio file. After that, you can match the audio with the project tempo by using **Musical Mode**.
- **Free Warp**
Allows you to change the timing of individual positions in your audio.

Algorithm Presets

You can select an algorithm preset that is applied for realtime playback and time stretching.

The **Algorithm** pop-up menu on the **Sample Editor** toolbar contains various presets that determine the audio quality of the realtime time stretching.

These presets are sorted into the categories **élastique** and **Standard** according to the technology used.



The algorithm preset affects warp changes in **Musical Mode**, **FreeWarp**, and **Swing**. Cubase Pro only: For the VariAudio warping and pitching features **Standard – Solo** is applied automatically.

Stretching Audio Events to the Project Tempo

You can stretch audio loops to the project tempo.

PROCEDURE

1. Select **File > Import > Audio File**, select the audio loop that you want to import, and click **OK**.
 2. Select the audio loop in the project.
 3. Select **Audio > Advanced > Stretch to Project Tempo**.
-

RESULT

The audio loop is stretched to match the project tempo.

Musical Mode

The **Musical Mode** allows you to tempo-match audio loops to the project tempo.

If you activate **Musical Mode** for an audio clip, realtime time stretching is applied to the clip so that it matches the project tempo. The audio events adapt to any tempo changes in Cubase, just like MIDI events.

In the **Sample Editor**, you can activate **Musical Mode**  in the **AudioWarp** section, the **Definition** section, and the toolbar.

NOTE

- You can also activate/deactivate **Musical Mode** from within the **Pool** by clicking the corresponding checkbox in the **Musical Mode** column.
 - Cubase supports ACID[®] loops. These loops are standard audio files but with embedded tempo/length information. When ACID[®] files are imported into Cubase, **Musical Mode** is automatically activated and the loops will adapt to the project tempo.
-

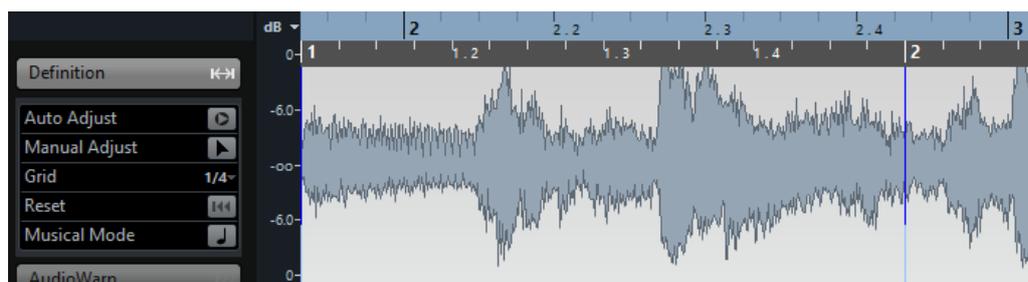
Matching Audio to the Project Tempo

You can use **Musical Mode** to adjust audio loops. Loops are short audio files containing a defined number of bars with straight beats, to the project tempo.

PROCEDURE

1. Select **File > Import > Audio File**, and select an audio loop in the file dialog.
2. In the **Project** window, double-click the imported audio loop to open it in the **Sample Editor**.
3. Open the **Definition** section and verify the rulers.

The project tempo grid shown in the upper ruler and the grid of your audio shown in the lower ruler do not match.



4. On the toolbar, verify that the length in bars corresponds to the length of the imported audio file. If necessary, listen to your audio and enter the correct length in bars and beats.
5. On the toolbar, open the **Algorithm** pop-up menu, and select a preset.
6. Listen to the loop and if necessary correct the **Bars** and **Beats** values on the toolbar.
7. Activate **Musical Mode**.

RESULT

The loop is warped and stretched to the project tempo. The rulers reflect the change.

In the **Project** window, the audio event shows a note symbol and a warp symbol. This indicates that time stretching has been applied.

Applying Swing

The **Swing** function allows you to add swing to audio that sounds too straight.

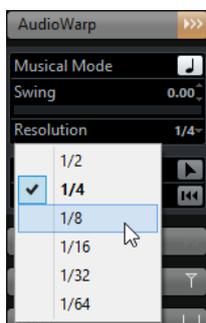
PREREQUISITE

You have opened your audio in the **Sample Editor** and **Musical Mode** is activated.

PROCEDURE

1. On the toolbar, open the **Algorithm** pop-up menu, and select a preset.
2. Open the **AudioWarp** section, and from the **Resolution** pop-up menu select a grid resolution.

This defines the positions that the swing is applied to. If you select **1/2**, the swing is applied in steps of half notes, for example.



3. Move the **Swing** fader to the right.

RESULT

This offsets the grid positions and creates a swing or shuffle feel. If you selected **1/2**, every second position in the grid is offset.

Auto Adjust

The **Auto Adjust** function is useful if you do not know the tempo of your audio file, or if its beat is not straight. It allows you to extract a definition grid from your audio before tempo matching it to the project tempo with the **Musical Mode**.

The **Auto Adjust** function extracts a local definition grid that you can match with the project tempo using **Musical Mode**.

RELATED LINKS

[Musical Mode](#) on page 459

Extracting a Tempo Definition Grid from Audio

If you want to match audio with an unknown tempo or a beat that is not straight to the project tempo, you need to extract its tempo definition grid first. This is done with the **Auto Adjust** function in the **Definition** section of the **Sample Editor**.

PREREQUISITE

You have defined a range in your audio clip or event that starts and ends at a bar line.

PROCEDURE

1. Double-click the audio clip or event in the **Project** window to open it in the **Sample Editor**.
2. Open the **Definition** section, and select a value from the **Grid** pop-up menu. This determines the grid resolution for your audio.
3. With the **Range Selection** tool, select the section that you want to use in your project, and that covers one or several bars.

NOTE

If you do not select a range, the grid is calculated for the audio event. If no audio event is defined, the grid is calculated for the clip. Make sure that the event or clip starts and ends on a bar line.

4. Click **Auto Adjust**.
-

RESULT

The definition grid is calculated for the selected section. The snap point moves to the start of the selected range. The audio tempo definition ruler changes to reflect your edits, and bars and beats positions are marked with vertical lines.

Manual Adjust

The **Manual Adjust** function is useful if you need to manually modify the grid and tempo of your audio file. This is the case if the extraction of a definition grid with the **Auto Adjust** function did not bring satisfying results, for example.

The **Manual Adjust** function allows you to correct the local definition grid. After this, you can match it with the project tempo using **Musical Mode**.

RELATED LINKS

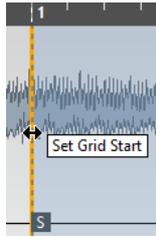
[Musical Mode](#) on page 459

Correcting the Audio Definition Grid

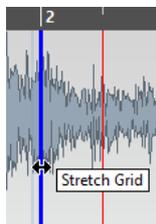
If the extraction of a definition grid with the **Auto Adjust** function did not bring satisfying results, you can correct the grid and tempo of your audio file with the **Manual Adjust** function.

PROCEDURE

1. Double-click the audio clip or event in the **Project** window to open it in the **Sample Editor**.
2. Open the **Definition** section, and activate **Manual Adjust**.
3. Move the mouse pointer to the beginning of the audio clip. The tooltip **Set Grid Start** is shown, and the mouse pointer turns into a double arrow.



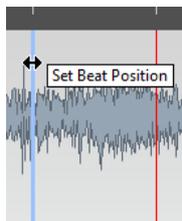
4. Click and drag to the right until the first downbeat and release the mouse button.
This matches the grid start and the snap point with the first main beat. The audio tempo definition ruler changes to reflect your edits.
5. In the upper part of the waveform, move the mouse pointer to the vertical line nearest to the second bar.
The tooltip **Stretch Grid** and a blue vertical line are shown.
6. Click and drag to the position of the first downbeat in the second bar and release the mouse button.
This sets the beginning of the next bar. All following bar positions in the grid are stretched or compressed so that all bars have the same length.



7. In the lower part of the waveform, move the mouse pointer over the grid lines.
The tooltip **Set Bar Position (Move Following Bars)** and a green vertical line are shown.
8. For incorrect bar positions, click and drag the green vertical line to the position of the first downbeat of the following bar and release the mouse button.
This also moves the bars to the right. The area to the left remains unaffected.



9. Move the mouse pointer over the grid lines for single beats.
The tooltip **Set Beat Position** and a blue vertical line are shown.
10. Click and drag the grid line to align single, incorrect beat positions and release the mouse button.



NOTE

You can remove misplaced beat edits by pressing any modifier key and clicking with the **Erase** tool.



RESULT

The definition grid is corrected, the audio tempo definition ruler reflects your edits.

AFTER COMPLETING THIS TASK

Activate **Musical Mode**.

Free Warp

The **Free Warp** tool allows you to correct the timing of individual positions in the audio material.

You can create and edit warp markers and drag them to musically relevant time positions in an audio event. This way, the audio before and after the warp marker is stretched. The amount of stretch is shown next to the warp marker handle.



A stretch factor higher than 1.0 indicates that the audio preceding the warp marker is stretched, a stretch factor lower than 1.0 indicates that the audio is compressed.

NOTE

The **Free Warp** tool snaps to hitpoint positions and warp markers.

Correcting the Timing with the Free Warp Tool

PROCEDURE

1. Double-click the audio clip or event in the **Project** window to open it in the **Sample Editor**.
2. On the toolbar, activate **Snap to Zero Crossing**.
If this button is activated, warp markers snap to zero crossings.
3. Optional: If you want to correct the timing of individual positions in the audio, define the local definition with the **Auto Adjust** or the **Manual Adjust** function, and activate **Musical Mode**.

4. On the **Transport** panel, activate **Click**, and play back the audio to determine positions where the beat is not on time with the click.
 5. In the **AudioWarp** section, activate **Free Warp**, place the mouse pointer at the position of the beat that you want to adjust, click, and hold.
The mouse pointer changes to a clock with arrows, and a warp marker is inserted.
 6. Drag the warp marker to the new position, and release the mouse button.
-

RESULT

The beat is now aligned with the corresponding position in the project.

RELATED LINKS

[Auto Adjust](#) on page 460

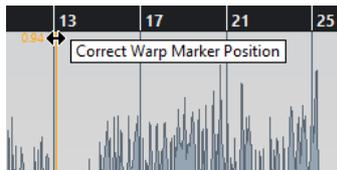
[Manual Adjust](#) on page 461

[Musical Mode](#) on page 459

Correcting Warp Marker Positions

PROCEDURE

1. In the **AudioWarp** section, activate **Free Warp**.
2. In the **Sample Editor**, click the warp marker handle and drag it to a new position.



A tooltip is shown to indicate that you can drag to correct the warp marker position.

RESULT

The warp marker moves to the new position and the audio is stretched or compressed accordingly.

Deleting Warp Markers

PROCEDURE

1. In the **AudioWarp** section, activate **Free Warp**.
2. Hold down **Alt** and click the warp marker you want to delete.

NOTE

To delete several markers, draw a selection rectangle.

RESULT

The warp marker is removed from the waveform.

Resetting Warp Markers

PROCEDURE

- In the **AudioWarp** section, click **Reset Warp Changes**.
-

RESULT

The warp markers are removed from the waveform, and the warp edits of the waveform are reset.

NOTE

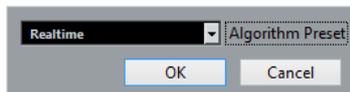
If **Musical Mode** is activated, only **Free Warp** edits are reset.

Flattening Realtime Processing

You can flatten warp modifications. This is useful if you want to reduce the CPU load, optimize the sound quality of the processing, or apply any offline processing.

PROCEDURE

1. Select the audio events that you want to process.
2. Perform one of the following actions:
 - Select **Audio > Realtime Processing > Flatten Realtime Processing**.
 - In the **Process** section of the **Sample Editor**, click **Flatten**.



In the dialog that opens, you can select an algorithm preset. If the time stretching factor is not outside the range of 0.5 and 2, you can choose between **Realtime** and **MPEX**.

3. Select an algorithm preset and click **OK**.
-

RESULT

Any loop that was previously stretched in realtime plays back exactly the same, but the warp markers discarded.

Unstretching Audio Files

PREREQUISITE

You have stretched an audio event in the **Sample Editor** with the **Free Warp** tool, or in the **Project** window with the **Object Selection** tool in **Sizing Applies Timestretch** mode.

PROCEDURE

1. Select the audio event that you want to unstretch.
 2. Select **Audio > Realtime Processing > Unstretch Audio**.
-

RESULT

All realtime time stretching is removed.

VariAudio (Cubase Pro only)

The VariAudio features in Cubase allow you to edit pitch, correct timing and intonation of individual notes in monophonic vocal recordings. Any modifications to the audio material can be undone.

NOTE

All VariAudio operations can be performed in the **Sample Editor** window and in the lower zone editor.

NOTE

The VariAudio features are optimized for monophonic recordings of vocals. Other monophonic recordings, such as saxophone, may work well. However, the quality of the result depends greatly on the recording.

Before you can edit the pitch and correct the timing of monophonic recordings, Cubase must analyze the audio and split it into segments. These segments are graphic representations of the notes sung.

As the quality of the segmentation is crucial for any further editing, we recommend you to verify the automatic segmentation and to edit it if necessary.

NOTE

- Due to the data gained during segmentation, the audio and thus the size of your project can increase.
- If you load projects with VariAudio files in Cubase Artist, VariAudio modifications are ignored. If you want to hear your modifications in Cubase Artist, you will have to bounce the audio files that have been edited with the Cubase VariAudio features.

RELATED LINKS

[Segmenting Monophonic Audio](#) on page 467

[Manual Editing of Segments](#) on page 468

[Segments and Gaps](#) on page 468

VariAudio and Offline Processes

If you apply offline processes and edits that affect the length on audio files that contain VariAudio data, existing VariAudio data becomes invalid. We therefore recommend to apply offline processing or edits before using the VariAudio features.

The following processes and edits may lead to the reanalysis of the audio material:

- All offline processes in the **Process** submenu of the **Audio** menu, except **Envelope**, **Fade In Fade Out**, **Normalize**, and **Silence**.
- Effect processes in the submenu **Audio > Plug-ins**.

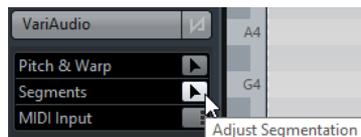
- Cutting, pasting, deleting or drawing in the **Sample Editor**.

Segmenting Monophonic Audio

To be able to edit the pitch and correct the timing of monophonic recordings, Cubase must analyze the audio and split it into segments.

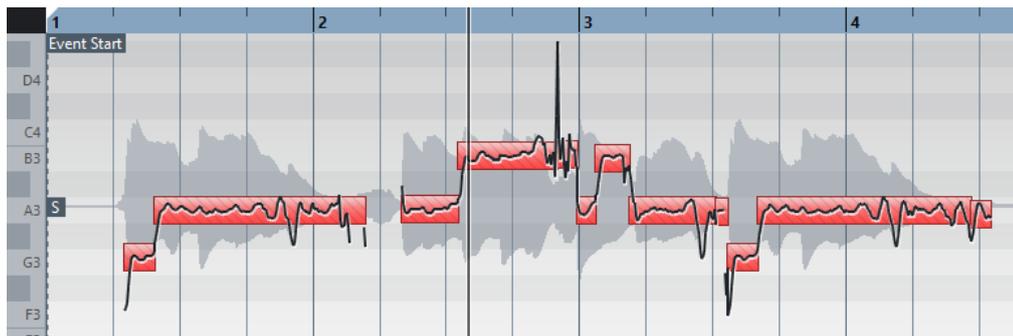
PROCEDURE

1. In the **Project** window, double-click the monophonic vocal recording to open the **Sample Editor**.
2. In the **Sample Editor** Inspector, click **VariAudio** to open the **VariAudio** section. A waveform image of the audio is shown.
3. Activate the **Segments** tool.



RESULT

Cubase automatically analyzes the audio and splits it into segments that are shown in the waveform image. The segmentation allows you to associate the audio with the sung notes.



NOTE

The analysis of long audio files may take some time.

AFTER COMPLETING THIS TASK

Verify the automatic segmentation and edit it manually.

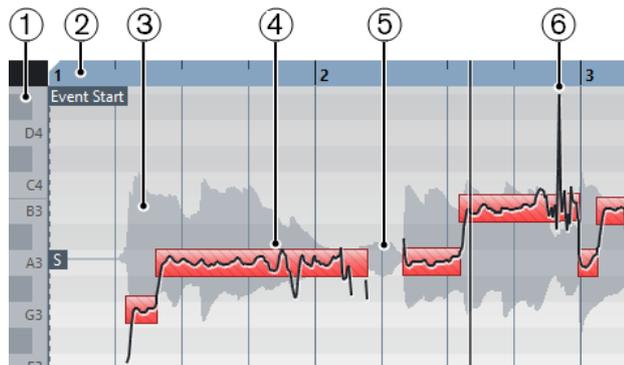
RELATED LINKS

[Segments and Gaps](#) on page 468

[Manual Editing of Segments](#) on page 468

Segments and Gaps

Cubase automatically analyzes the audio and splits it into segments that are shown in the waveform image.



To understand and edit the segmentation, the following concepts are crucial:

1. Pitch position

The pitch position of the segments is indicated by the piano keyboard to the left of the waveform. Pitches represent the perceived fundamental frequency of the sound. The average pitch of a segment is calculated from its micro-pitch curve.

2. Time position

The time position and the length of the segments are indicated by the timeline.

3. Audio waveform

The audio waveform is always shown as mono, even if you have opened a stereo or multi-channel file.

4. Segment

The segments represent the tonal portions of the analyzed audio. The pitch and time position of the segments allow you to associate the segments to the original audio.

5. Gap

The gaps in between segments represent the non-tonal portions of the analyzed audio. These can be caused by breath sounds or rests, for example.

NOTE

Gaps, caused by weak audio signals or audio sections with unclear pitch information, such as consonants or effect sounds, must be included in the segments manually. Otherwise, later pitch modifications affect only the tonal portions.

6. Micro-pitch curves

The micro-pitch curves that are shown in the segments represent the progression of the pitch.

Manual Editing of Segments

As the quality of the segmentation is crucial for any further editing, we recommend you to verify the automatic segmentation and to edit it if necessary.

Verify the start and end positions of the segments and try to match them with the waveform envelope for each word. You have the following possibilities to edit segments:

- Changing the start and end points of segments by resizing segments.
- Changing the length of segments by cutting or glueing segments.
- Moving segments on the timeline by dragging them to the left or right.

- Deleting segments.

Navigating and Zooming

You can navigate through the segments and zoom in on them. This makes manual editing more comfortable.

- To navigate through the segments, use the **Left Arrow** key or the **Right Arrow** key on your computer keyboard.
- To zoom in on segments, hold down **Alt** and draw a selection rectangle.
- To zoom out, hold down **Alt** and click in an empty area of the waveform.
- To zoom out to show all segments, hold down **Alt** and double-click in an empty area of the waveform.

Auditioning Segments

You can audition the segments one by one, loop them, or play them back from the beginning to the end. This makes segmentation as well as pitch and warp editing more comfortable.

To audition segments use one of the following methods:

- To play back selected segments, select the segments and activate **Audition**.



- To play back selected segments in a loop, select the segments, activate **Audition Loop**, and activate **Audition**.



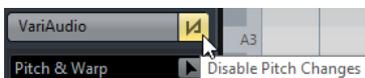
- To play back segments at a specific position, activate the **Play** tool, click at the position.



- To audition pitch modifications while editing, activate **Acoustic Pitch Feedback**.



- To compare your pitch changes to the original audio pitches, activate **Disable Pitch Changes** in the **VariAudio** section.



- To compare your warp changes to the original timing of the audio, activate **Disable Warp Changes** in the **AudioWarp** section.



Changing the Start and End Point of Segments

If the start and end points of the segments do not match with the waveform envelope, you can change them.

PREREQUISITE

You have opened the audio in the **Sample Editor** and activated the **Segments** tool in the **VariAudio** section.

PROCEDURE

1. Compare the start and end positions of the segments with the waveform envelope for each note.
2. Optional: Select one or several segments and on the **Sample Editor** toolbar, activate **Audition** to audition the segments.
3. Perform one of the following actions:
 - If a segment starts too early, move the mouse pointer over the start of the segment, click and drag to the right.



- If a segment ends too late, move the mouse pointer over the end of the segment, click and drag to the left.



NOTE

You can only drag the segment start or end until the boundaries of the next segment. Segments cannot overlap.

RESULT

The start and end positions of the segments are changed according to your edits. The average pitch of the segment is recalculated.

NOTE

Changing the length of a segment may lead to a different average pitch and therefore to a pitch change. If the non-tonal portions of the audio increase, the segment may be deleted.

RELATED LINKS

[Segmenting Monophonic Audio](#) on page 467

Changing the Length of Segments

If a segment includes more than a note, or if a single note is spread over multiple segments, you can change them.

PREREQUISITE

You have opened the audio in the **Sample Editor** and activated the **Segments** tool in the **VariAudio** section.

PROCEDURE

1. Compare the segments with the waveform envelope for each note.
2. Optional: Select one or several segments and on the Sample Editor toolbar, activate the **Audition** to audition the segments.
3. Perform one of the following actions:

- If a segment includes more than a note, move the mouse pointer over the lower border of the segment and click to cut the segment.



- If a single note is spread over several segments, hold down **Alt** and move the mouse pointer over the segment, and click to glue the segment to the next segment.



NOTE

If the segment is already very short, it cannot be cut.

RESULT

The segments are changed according to your edits. The average pitch of the segment is recalculated.

NOTE

Changing the length of a segment may lead to a different average pitch and therefore to a pitch change. If the non-tonal portions of the audio increase, the segment may be deleted.

AFTER COMPLETING THIS TASK

If a note is at the wrong position after cutting the segment, move it horizontally.

RELATED LINKS

[Segmenting Monophonic Audio](#) on page 467

[Moving Segments on the Timeline](#) on page 471

Moving Segments on the Timeline

If a note is at the wrong position after cutting the segment, you can move it horizontally.

PREREQUISITE

You have opened the audio in the **Sample Editor** and activated the **Segments** tool in the **VariAudio** section.

PROCEDURE

1. Compare the segments with the waveform envelope for each note.
2. Optional: Select one or several segments and on the **Sample Editor** toolbar, activate the **Audition** to audition the segments.
3. Move the mouse pointer over the upper border of the segment, click and drag to the left or to the right.



NOTE

You can only move the segment until the boundaries of the next segment. Segments cannot overlap.

RESULT

The segment is moved. The average pitch of the segment is recalculated.

NOTE

Changing the length of a segment may lead to different average pitch and therefore to a pitch change. If the non-tonal portions of the audio increase, the segment may be deleted.

RELATED LINKS

[Segmenting Monophonic Audio](#) on page 467

Deleting Segments

Sometimes it might be useful to delete segments, for example for non-tonal portions of the audio.

PREREQUISITE

You have opened the audio in the **Sample Editor** and activated the **Segments** tool in the **VariAudio** section.

PROCEDURE

1. Compare the segments with the waveform envelope for each note.
 2. Optional: Select one or several segments and on the **Sample Editor** toolbar, activate the **Audition** to audition the segments.
 3. Select the segment that you want to delete, and press **Backspace**.
-

RESULT

The segment is deleted.

RELATED LINKS

[Segmenting Monophonic Audio](#) on page 467

Muting Segments

You can mute individual segments.

PREREQUISITE

You have opened the audio in the **Sample Editor** and activated the **Pitch & Warp** tool in the **VariAudio** section.

PROCEDURE

1. Move the mouse pointer over the lower border of a segment.
An x symbol is shown in the segment.



2. Click the x symbol.

RESULT

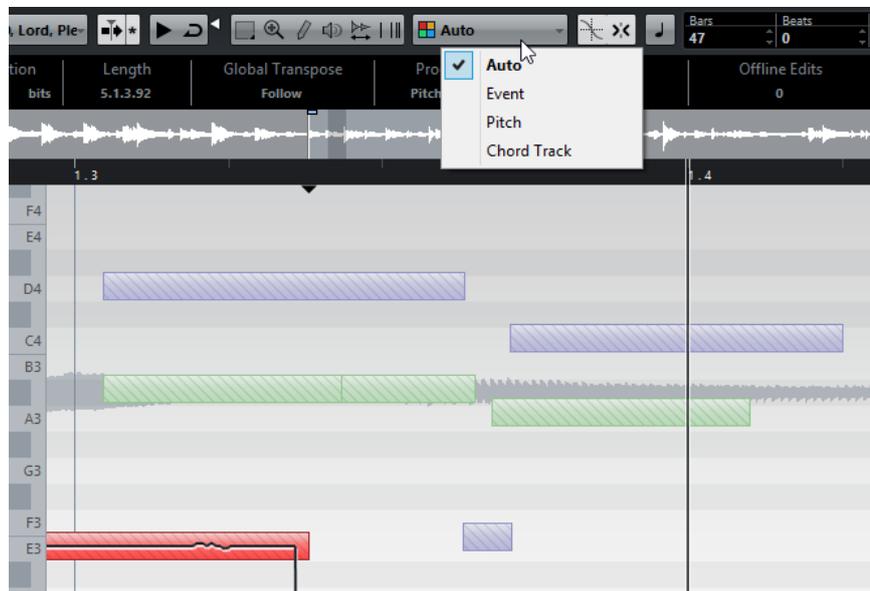
The segment is grayed out to indicate that it is muted.

AFTER COMPLETING THIS TASK

You can unmute the segment by clicking the x symbol again.

Segment Colors

You can select a color scheme for VariAudio segments. If you work with several audio events, this makes it easier to see which segments belong to which event.



The following options are available:

Auto

Segments that belong to the same audio event get the same color.

Event

Segments get the same color as the corresponding event in the **Project** window.

Pitch

Segments get colors depending on their pitches.

Chord Track

Segments that match the corresponding chord or scale events on the chord track get a specific color.

Pitch Changes

The VariAudio features allow you to change the pitch of audio segments for corrective purposes but also creatively. By changing note pitches you can change the melody of the original audio with or without preserving a natural sound.

Pitch changes include the following:

- Raising or lowering pitches.
- Quantizing pitches.
- Changing the micro-pitch curve.
- Straightening pitches.

Pitch Snapping

There are 3 different modes that affect the way in which a note will snap to a certain pitch.

- **Absolute Pitch Snapping**
To snap the segment to the next semitone, hold down **Ctrl/Cmd**.
- **Relative Pitch Snapping**
To snap the segment and keep its current deviation in cents, just drag.
- **No Pitch Snapping**
To edit the pitch freely, hold down **Shift**.

NOTE

To change the modifier, open the **Preferences** dialog and select **Editing > Tool Modifier**.

Raising or Lowering Pitches

PREREQUISITE

The audio file is segmented and the segments are correct. You have opened the audio in the **Sample Editor** and activated the **Pitch & Warp** tool in the **VariAudio** section.

PROCEDURE

1. Select one or several segments, and move the mouse pointer over it.
The mouse pointer becomes a hand symbol.
2. Perform one of the following actions to raise or lower the pitch:
 - Drag the segment up or down and release the mouse.
 - Use the **Up Arrow/Down Arrow** to change the pitch in semitone steps.
 - Hold down **Shift** and use **Up Arrow/Down Arrow** to change the pitch in cent steps.

NOTE

The more the pitch deviates from the original pitch, the less likely it is that your audio sounds natural. You cannot choose note pitches above C5 and below E0.

RESULT

The **Solo** algorithm is selected automatically and the segment pitch is raised or lowered according to your settings.

Changing Pitches by MIDI Input

You can change segment pitches by pressing a key on your MIDI keyboard or by using the **Virtual Keyboard**.

PREREQUISITE

The audio file is segmented and the segments are correct. You have opened the audio in the **Sample Editor** and activated the **Pitch & Warp** tool in the **VariAudio** section. You have connected and set up a MIDI keyboard.

PROCEDURE

1. Select one or several segments.
2. In the **VariAudio** section, activate **MIDI Input**.



3. Perform one of the following actions to change the pitch:
 - Press a key on your MIDI keyboard.
 - Use the **Virtual Keyboard** to change the pitch.

NOTE

The more the pitch deviates from the original pitch, the less likely it is that your audio sounds natural. You cannot choose note pitches above C5 and below E0.

RESULT

The **Solo** algorithm is selected automatically, and the segment pitch is raised or lowered according to the note you play. If you select several segments, the pitch of the first selected segment is changed to the pitch of the MIDI note you play and the pitches of the other segments are changed by the same amount.

NOTE

The **MIDI Input** only affects the pitches of the segments. MIDI controller data are ignored.

AFTER COMPLETING THIS TASK

Deactivate **MIDI Input**.

RELATED LINKS

[Virtual Keyboard](#) on page 221

MIDI Input Modes

The **MIDI Input** function allows you to assign MIDI notes in **Still** mode or in **Step** mode.

- To switch between **Still** mode and **Step** mode, **Alt-click MIDI Input**.

Still mode



Use this mode if you want to change the pitches of individual segments or selections.

Step mode



Use this mode if you want to step through the segments while changing their pitches. This allows you to work in a more creative way, for example, to develop completely new melody lines via MIDI.

After you have assigned a MIDI note to a segment, the next segment is automatically selected.

RELATED LINKS

[Step Input](#) on page 697

Quantizing Pitches

You can quantize the audio pitch to the nearest semitone position.

PREREQUISITE

The audio file is segmented and the segments are correct. You have opened the audio in the **Sample Editor** and activated the **Pitch & Warp** tool in the **VariAudio** section.

PROCEDURE

1. Select one or several segments.
2. In the **VariAudio** section, move the **Quantize Pitch** slider to the right.



RESULT

The **Solo** algorithm is selected automatically, and the segment pitch is quantized iteratively.

NOTE

In the **Sample Editor** category of the **Key Commands** dialog, you can set up a key command for **Quantize Pitch**. If you use the key command, the segments are immediately quantized to the next semitone position.

RELATED LINKS

[Key Commands](#) on page 938

Micro-Pitch Changes

Sometimes changing the pitch of the whole note segment is not enough. In these cases, you can modify the micro-pitch curves inside the segments.

IMPORTANT

The micro-pitch curve displays the progression of the pitch for the tonal portion of the audio segment. For non-tonal portions of the audio, micro-pitch curves cannot be shown.

You have the following options to change the micro-pitch curve:

- Tilting an entire micro-pitch curve.
- Tilting a micro-pitch curve from a segment border to an anchor.

This is useful if you want to adjust only the start or the end of a segment.

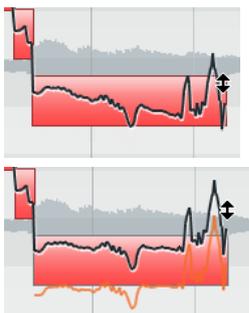
Tilting an Entire Micro-Pitch Curve

PREREQUISITE

The audio file is segmented and the segments are correct. You have opened the audio in the **Sample Editor** and activated the **Pitch & Warp** tool in the **VariAudio** section.

PROCEDURE

1. Move the mouse pointer over the upper left or right border of the segment.
The mouse pointer becomes an up/down arrow.
2. To tilt the micro-pitch curve, drag the curve up or down, and release the mouse.



RESULT

The **Solo** algorithm is selected automatically, and the micro-pitch curve is tilted according to your settings.

Tilting a Micro-Pitch Curve from a Segment Border to an Anchor

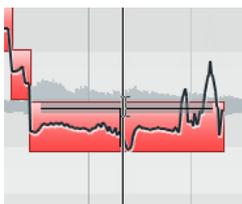
You can set an anchor point to specify which part of the segment is affected when tilting a micro-pitch curve.

PREREQUISITE

The audio file is segmented and the segments are correct. You have opened the audio in the **Sample Editor** and activated the **Pitch & Warp** tool in the **VariAudio** section.

PROCEDURE

1. Move the mouse pointer over the upper border of the segment.
The mouse pointer becomes an I-beam symbol.
2. Click at the position where you want to set an anchor point.
A vertical line appears at the position where you clicked.

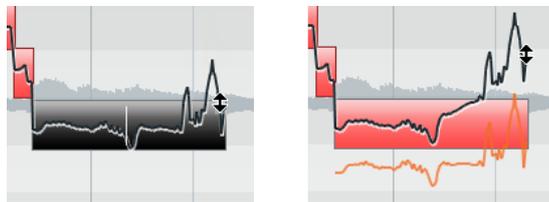


3. Move the mouse pointer over the upper left or right border of the segment.
The mouse pointer becomes an up/down arrow.

4. To tilt the micro-pitch curve, drag the curve up or down, and release the mouse.
-

RESULT

The **Solo** algorithm is selected automatically, and the micro-pitch curve is tilted from the segment border to the anchor.



RELATED LINKS

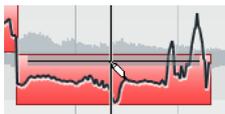
[Removing Anchors](#) on page 478

[Rotating a Micro-Pitch Curve around an Anchor](#) on page 478

Removing Anchors

PROCEDURE

1. Hold down **Alt** and move the mouse pointer over the position of the anchor at the upper border of the segment.
The mouse pointer becomes a glue tube.
2. Click at the position of the anchor point.



RESULT

The tilt anchor is removed.

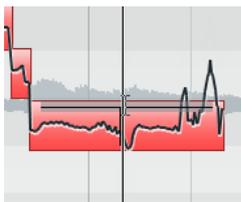
Rotating a Micro-Pitch Curve around an Anchor

PREREQUISITE

The audio file is segmented and the segments are correct. You have opened the audio in the **Sample Editor** and activated the **Pitch & Warp** tool in the **VariAudio** section.

PROCEDURE

1. Move the mouse pointer over the upper border of the segment.
The mouse pointer becomes an I-beam symbol.
2. Click at the position where you want to set an anchor point.
A vertical line appears at the position where you clicked.



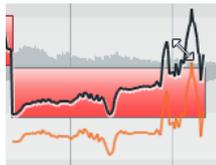
3. Move the mouse pointer over the upper left or right border of the segment.
The mouse pointer becomes an up/down arrow.

4. To rotate the micro-pitch curve, press **Alt** drag the curve up or down, and release the mouse.



RESULT

The **Solo** algorithm is selected automatically, and the micro-pitch curve is rotated around the anchor.



RELATED LINKS

[Removing Anchors](#) on page 478

[Tilting a Micro-Pitch Curve from a Segment Border to an Anchor](#) on page 477

Straightening Micro-Pitch Curves

You can straighten micro-pitch curves to compensate for the rise and fall of notes, that is, the deviation from a representative pitch.

PREREQUISITE

The audio file is segmented and the segments are correct. You have opened the audio in the **Sample Editor** and activated the **Pitch & Warp** tool in the **VariAudio** section.

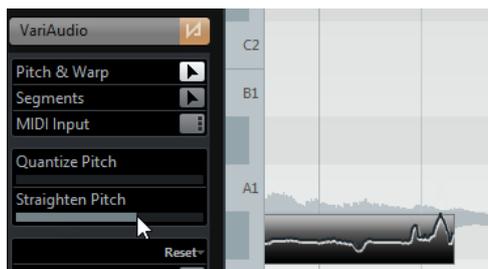
PROCEDURE

1. Select one or several segments.
2. In the **VariAudio** section, move the **Straighten Pitch** slider to the right.



RESULT

The **Solo** algorithm is selected automatically, and the micro-pitch curves of the selected segments are straightened according to your settings.



Timing Modifications

Modifying the timing of segments, or warping, is useful if you want to align a musical accent to a certain time position or change the timing of segments in monophonic vocal recordings.

If you warp audio segments, warp markers are created. These are shown in the **VariAudio** and the **AudioWarp** sections of the **Sample Editor** Inspector.

Warping Segments

PREREQUISITE

The audio file is segmented and the segments are correct. You have opened the audio in the **Sample Editor** and activated the **Pitch & Warp** tool in the **VariAudio** section. **Snap** is activated.

PROCEDURE

1. Move the mouse pointer over the start or end of a segment.
The mouse pointer becomes a double arrow and warp markers are displayed below the ruler.
2. Drag the start or end of the segment to the desired time position.

RESULT

The **Solo** algorithm is selected automatically. If **Snap** is activated, the segment border snaps to the grid. The timing of the segment and the adjacent segments is changed according to your settings. Warp markers are shown to indicate which portions of the audio are stretched.

NOTE

Timing modifications introduced this way do not adapt to the project tempo. If this is what you want, use **Musical Mode**.

Editing Warp Markers

You can change the insert position of a warp marker in the audio. This is useful if the beginning of the waveform does not correspond to the beginning of a segment because the audio starts with non-tonal portions like breath sounds, for example.

PREREQUISITE

The audio file is segmented and the segments are correct. You have opened the audio in the **Sample Editor** and activated the **Pitch & Warp** tool in the **VariAudio** section. **Snap** is activated.

PROCEDURE

1. Move the mouse pointer over the start of the segment and drag to the beginning of the bar.

The mouse pointer becomes a double arrow and segment border snaps to the grid at the exact bar position.



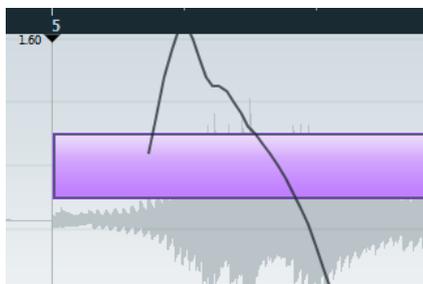
2. Move the mouse pointer over the warp handle and drag it to the beginning of the waveform.



The mouse pointer becomes a double arrow and the background is highlighted to indicate which part of the waveform is affected by the change.

RESULT

Now the beginning of the waveform matches the beginning of the bar.



Deleting Warp Markers

You can delete warp markers.

PREREQUISITE

The audio file is segmented and the segments are correct. You have opened the audio in the **Sample Editor** and activated the **Pitch & Warp** tool in the **VariAudio** section.

PROCEDURE

- Hold down **Shift**, move the mouse pointer over the warp handle and click. The mouse pointer becomes an eraser.
-

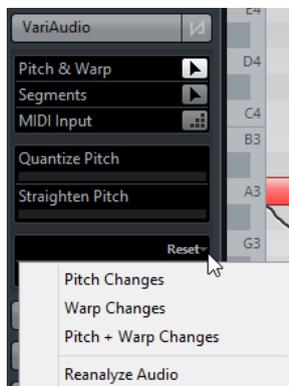
RESULT

The warp marker is deleted.

Reset Functions

The **Reset** pop-up menu provides functions that allow you to reset all **VariAudio** changes that you performed.

To open the **Reset** functions, open the **VariAudio** section of the **Sample Editor** Inspector and click **Reset**.



Pitch Changes

Resets pitch changes including micro-pitch modifications with the **Tilt Micro Pitches** tool either for the selected segments (if available) or for the whole file.

Warp Changes

Resets warp changes.

Pitch + Warp Changes

Resets pitch, micro-pitch, and warp changes either for the selected segments (if available) or for the whole file.

Reanalyze Audio

Resets the segmentation and reanalyzes the audio.

NOTE

You can set up key commands for the reset and the reanalyze function in the **Sample Editor** category of the **Key commands** dialog.

RELATED LINKS

[Key Commands](#) on page 938

Extracting MIDI from Audio

You can extract a MIDI part from your audio. This is useful if you want to copy the tune and sound of your audio with a MIDI instrument or VST instrument.

PREREQUISITE

The audio file is segmented and the segments are correct. All pitch and timing changes are completed. You have opened the audio in the **Sample Editor** and activated the **Segments** tool in the **VariAudio** section.

PROCEDURE

1. In the **VariAudio** section, click **Extract MIDI**.

2. In the **Extract MIDI** dialog that opens, make your settings and click **OK**.
-

RESULT

A MIDI part is created according to your settings.

RELATED LINKS

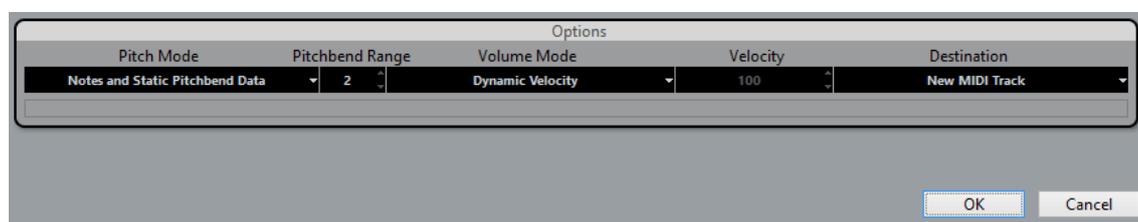
[Segmenting Monophonic Audio](#) on page 467

[Extract MIDI Dialog](#) on page 483

Extract MIDI Dialog

The **Extract MIDI** dialog allows you to specify which audio data is used when creating a MIDI part with the **Extract MIDI** function.

To open the **Extract MIDI** dialog, open the **VariAudio** section of the **Sample Editor Inspector**, activate the **Segments** tool, and click **Extract MIDI**.



The following pop-up menus are available:

Pitch Mode

Allows you to specify which data is included if you extract MIDI. The following options are available:

Just Notes and No Pitchbend Data

Extracts notes only.

Notes and Static Pitchbend Data

Extracts pitchbend events for each segment. In the **Pitchbend Range** field you can specify a pitchbend value from 1 to 24.

NOTE

If you work with an external MIDI device, set it to the same **Pitchbend Range** value.

Notes and Continuous Pitchbend Data

Extracts pitchbend events that correspond to the micro-pitch curve. In the **Pitchbend Range** field you can specify a pitchbend value from 1 to 24.

NOTE

If you work with an external MIDI device, set it to the same **Pitchbend Range** value.

Notes and NoteExp Pitchbend Curve

Extracts pitchbend events that correspond to the micro-pitch curve. These are saved as Note Expression data for the resulting MIDI notes.

Notes and NoteExp VST 3 Tuning Curve

Extracts VST 3 events for the **Tuning** parameter. These are created as Note Expression data for the resulting MIDI notes.

NOTE

This works only with a connected VST instrument that is compatible with Note Expression.

Volume Mode

Allows you to specify how volume information from the audio is extracted. The following options are available:

Fixed Velocity

Assigns the same velocity to all created MIDI notes. In the **Velocity** field you can specify a velocity value.

Dynamic Velocity

Assigns an individual velocity value to each created MIDI note according to the amplitude of the audio signal.

Volume Controller Curve

Creates a continuous volume controller curve within the MIDI part. In the **MIDI Controller** field you can specify the MIDI controller.

NoteExp Volume Controller Curve

Extracts MIDI volume controller events. These are created as Note Expression data for the resulting MIDI notes.

NoteExp VST 3 Volume Curve

Extracts a VST 3 volume curve. This is created as Note Expression data for the resulting MIDI notes.

NOTE

This option works only with a connected VST instrument that is compatible with Note Expression.

Destination

Allows you to specify where the MIDI part is placed. The following options are available:

First Selected Track

Places the MIDI part on the first selected MIDI or instrument track. Note that any MIDI parts from previous extractions that are on this track are deleted.

New MIDI Track

Creates a new MIDI track for the MIDI part.

Project Clipboard

Copies the MIDI part into the clipboard. This option allows you to insert it at the desired position on a MIDI or instrument track in the **Project** window.

NOTE

If you opened the **Sample Editor** from the **Pool** and the audio file is not part of your project, the MIDI part is inserted at the beginning of the project.

Flattening Realtime Processing

You can flatten VariAudio modifications. This is useful if you want to reduce the CPU load, optimize the sound quality of the processing, or apply any offline processing.

PROCEDURE

1. Select the audio events that you want to process.
 2. Perform one of the following actions:
 - Select **Audio > Realtime Processing > Flatten Realtime Processing**.
 - In the **Process** section of the **Sample Editor**, click **Flatten**.
 3. Click **OK**.
-

RESULT

Any loop that was previously pitch shifted plays back exactly the same, but **Musical Mode** is deactivated, and VariAudio data is lost.

Harmony Voices for Audio

Cubase allows you to quickly create harmonies for monophonic audio material.

You have the following options:

- You can have Cubase create default harmony voices for your audio.
- You can create a chord track with some chords first, and then create harmony voices for your audio based on that track.

In both cases, a VariAudio analysis is performed for the selected audio event, and up to 4 copies of the corresponding track are created. These new tracks that are named *Soprano*, *Alto*, *Tenor*, and *Bass* contain independent copies of the selected audio event.

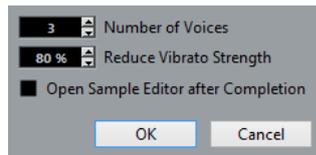
If you use the function without a chord track, the voices are distributed by default. If you create a chord track with some chords and set the original track to follow the chord track in **Single Voice** mode, the harmony voices are distributed according to the chord voicing.

Generating Harmony Voices for Monophonic Audio

You can automatically generate harmony voices for monophonic audio.

PROCEDURE

1. Optional: Add a chord track to your project and set it up.
2. Select **File > Import > Audio File** and import a monophonic audio file.
3. In the **Project** window, select the audio event.
4. Select **Audio > Generate Harmony Voices**.



5. Specify the number of voices that you want to create, enter a value for the vibrato reduction, and click **OK**.

RESULT

The audio event is analyzed and VariAudio segments are created automatically. A copy of the event with altered pitches is created for every voice and placed on a newly created track.

NOTE

- If you added a chord track, the pitches of the resulting voices follow the soprano, alto, tenor, and bass voices from the chord track voicing.
- If you work without the chord track, the generated VariAudio segments of voice number 1 (soprano) are transposed 3 semitones upwards in relation to the original audio. The segments of voice numbers 2, 3, and 4 (alto, tenor, and bass) are transposed 3, 6, and 9 semitones downwards.

RELATED LINKS

[Adding the Chord Track](#) on page 789

Audio Part Editor

The **Audio Part Editor** provides an overview of the selected audio parts. It allows you to view, audition and edit parts by cutting and pasting, crossfading, drawing level curves, or by processing parts. Editing is non-destructive so that you can undo modifications at any time.

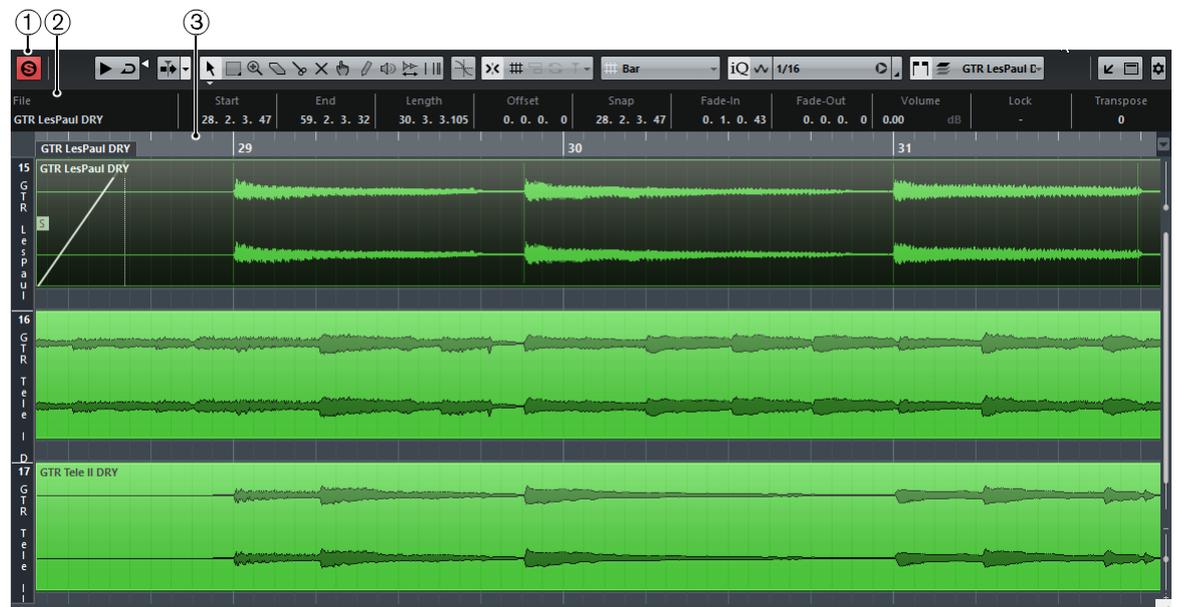
You can open the **Audio Part Editor** in a separate window or in the lower zone of the **Project** window. Opening the **Audio Part Editor** in the lower zone of the **Project** window is useful if you want to access the **Audio Part Editor** functions from within a fixed zone of the **Project** window.

To open an audio part in the **Audio Part Editor**, do one of the following:

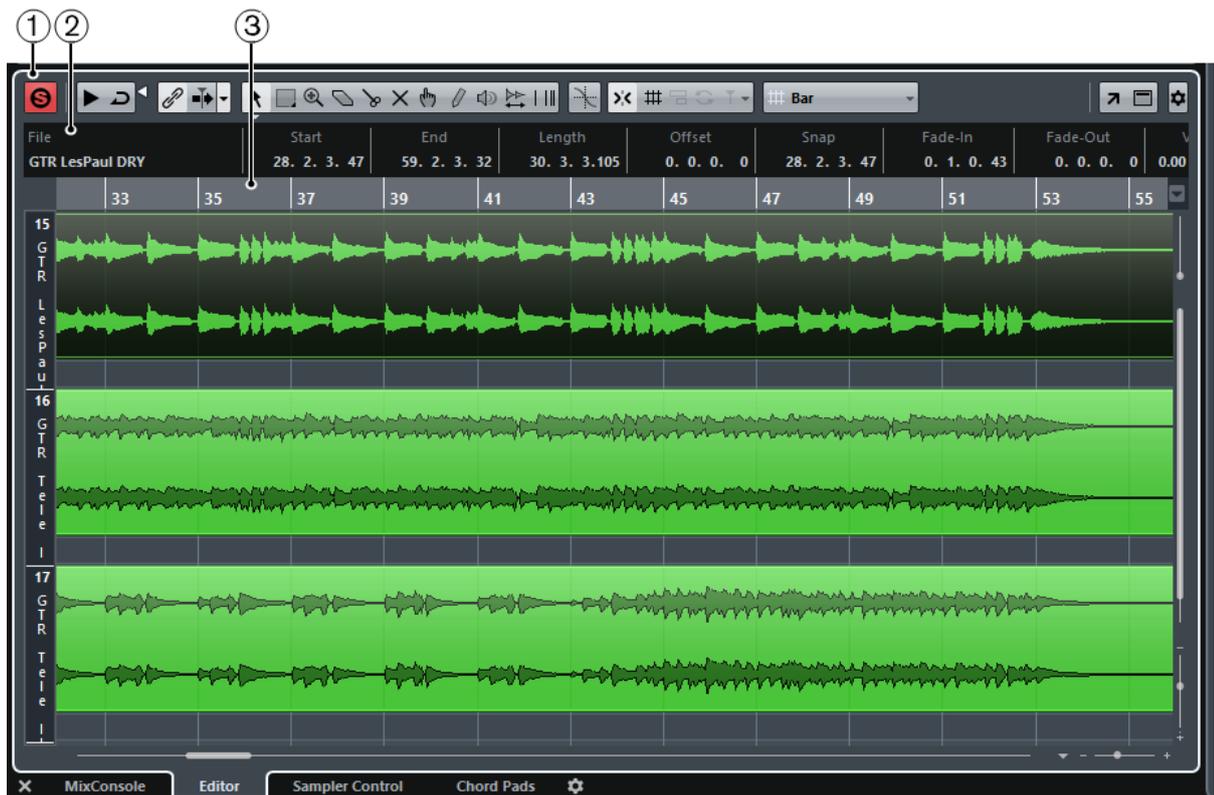
- Double-click an audio part in the **Project**.
- Select an audio part in the **Project** window and press **Return** or **Ctrl/Cmd-E**.
- Select an audio part in the **Project** window and select **Audio > Open Audio Part Editor**.
- In the **Key Commands dialog** in the **Editors** category, assign a key command for **Open Audio Part Editor**. Select an audio part in the **Project** window and use the key command.

NOTE

If you select **Audio > Set up Editor Preferences**, the **Preferences** dialog opens on the **Editors** page. Make your settings to specify, if you want the **Audio Part Editor** to open in a separate window or in the lower zone of the **Project** window.



Audio Part Editor Window



Audio Part Editor in Lower Zone

- 1. Toolbar**
Contains tools for selecting, editing, and playing back audio parts.
- 2. Info Line**
Displays information on the audio parts.
- 3. Ruler**
Displays the timeline and the display format of the project.

RELATED LINKS

[Opening the Editor in the Lower Zone](#) on page 69

[Opening the Editor Inspector](#) on page 58

[Ruler](#) on page 50

[Info Line](#) on page 52

[Toolbar](#) on page 488

Toolbar

The toolbar contains tools for selecting, editing, and playing back audio parts.

- To show or hide the toolbar elements, right-click the toolbar and activate or deactivate the elements.

The following options are available:

Info/Solo

Solo Editor



Solos the selected audio during playback.

Left Divider

Left Divider



Allows you to use the left divider. Tools that are placed to the left of the divider are always shown.

Auto-Scroll

Link Project and Lower Zone Editor Cursors



Links timelines, cursors and zoom factors of the lower zone editor and the **Project** window.

NOTE

You cannot activate **Link Project and Lower Zone Editor Cursors** if **Independent Track Loop** is active.

Auto-Scroll



Keeps the project cursor visible during playback. The **Switch Auto-Scroll Settings** pop-up menu allows you to activate **Page Scroll** or **Stationary Cursor** and to activate **Suspend Auto-Scroll when Editing**.

Preview

Audition



Plays back the edited audio. **Audition Loop** loops the playback until you deactivate the **Audition** icon. The **Audition Volume** slider allows you to adjust the volume.

Tool Buttons

Object Selection



Allows you to select audio parts.

Range Selection



Allows you to select ranges.

Zoom



Allows you to zoom in the waveform display. To zoom out, hold **Alt** while clicking.

Erase



Allows you to erase events from audio parts.

Split



Allows you to split audio parts.

Mute



Allows you to mute/unmute audio parts.

Comp



Allows you to assemble takes.

Draw



Allows you to edit audio.

Play



Allows you to play back the clip from the position where you click until you release the mouse button.

Scrub



Allows you to locate positions.

Time Warp (Cubase Pro only)



Allows you to drag a musical position to a certain position in time.

Multiple Part Controls

Show Part Borders



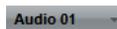
Shows/Hides part borders for the active audio part, within the left and right locators.

Edit Active Part Only



Restricts editing operations to the active part.

Currently Edited Part



Lists all parts that were selected when you opened the editor, and allows you to activate a part.

Nudge Palette

Trim Start Left



Increases the length of the selected element by moving its start to the left.

Trim Start Right



Decreases the length of the selected element by moving its start to the right.

Move Left



Moves the selected element to the left.

Move Right



Moves the selected element to the right.

Trim End Left



Decreases the length of the selected element by moving its end to the left.

Trim End Right



Increases the length of the selected element by moving its end to the right.

Snap/Quantize

Snap to Zero Crossings



Restricts editing to zero crossings, that is, positions where the amplitude is zero.

Snap On/Off



Activates/Deactivates the snap function.

Snap Type



Allows you to select one of the following snap types:

- **Grid**  snaps events to the grid that is selected in the **Quantize Presets** pop-up menu.
- **Grid Relative**  keeps the relative positions when snapping events to the grid.
- **Events**  snaps events to the start or end of other events.
- **Shuffle**  changes the order of events if you drag one event to the left or right of other events.
- **Magnetic Cursor**  snaps events to the cursor position.
- **Grid + Cursor**  snaps events to the quantize grid that is selected in the **Quantize Presets** pop-up menu or to the cursor position.
- **Events + Cursor**  snaps events to the start or end of other events or to the cursor position.

- **Grid + Events + Cursor**  snaps events to the quantize grid that is selected in the **Quantize Presets** pop-up menu, to the start or end of other events or to the cursor position.

Iterative Quantize On/Off



Activates/Deactivates iterative quantize.

Quantize Presets



Allows you to select a quantize or a groove preset.

Apply Quantize



Applies the quantize settings.

Open Quantize Panel



Opens the **Quantize Panel**.

Event Colors

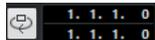
Color Menu



Allows you to define audio part colors.

Independent Track Loop

Independent Track Loop



Activates/Deactivates the independent track loop for the edited part.

NOTE

If you activate **Independent Track Loop**, the **Link Project and Lower Zone Editor Cursors** function is automatically deactivated in the lower zone editor.

Right Divider

Right Divider



Allows you to use the right divider. Tools that are placed to the right of the divider are always shown.

Window Zone Controls

Open in Separate Window



This button is available in the lower zone editor. It opens the editor in a separate window.

Open in Lower Zone



This button is available in the editor window. It opens the editor in the lower zone of the **Project** window.

Show/Hide Info



Allows you to activate/deactivate the info line.

Set up Toolbar



Opens a pop-up menu where you can set up which toolbar elements are visible.

RELATED LINKS

[Link Project and Lower Zone Editor Cursors](#) on page 70

[Auto-Scroll](#) on page 215

[Suspend Auto-Scroll when Editing](#) on page 215

Info Line

The info line shows information about the audio part, such as the start, end, length, or the time stretch algorithm.

File	Start	End	Length	Offset	Snap
04 piano 01	1. 1. 1. 0	3. 1. 1. 0	2. 0. 0. 0	0. 0. 0. 0	1. 1. 1. 0
Fade-In	Fade-Out	Volume	Lock	Transpose	Fine-Tune
0. 0. 0. 0	0. 0. 0. 0	0.00 dB	-	0	0
Global Transpose	Root Key	Mute	Musical Mode	Algorithm	
Follow	E	-	Musical	élastique Pro - Time	

- To show or hide the info line, activate **Show/Hide Info**  on the toolbar. The on/off status of the info line in the **Audio Part Editor** window and in the lower zone editor are independent of each other.

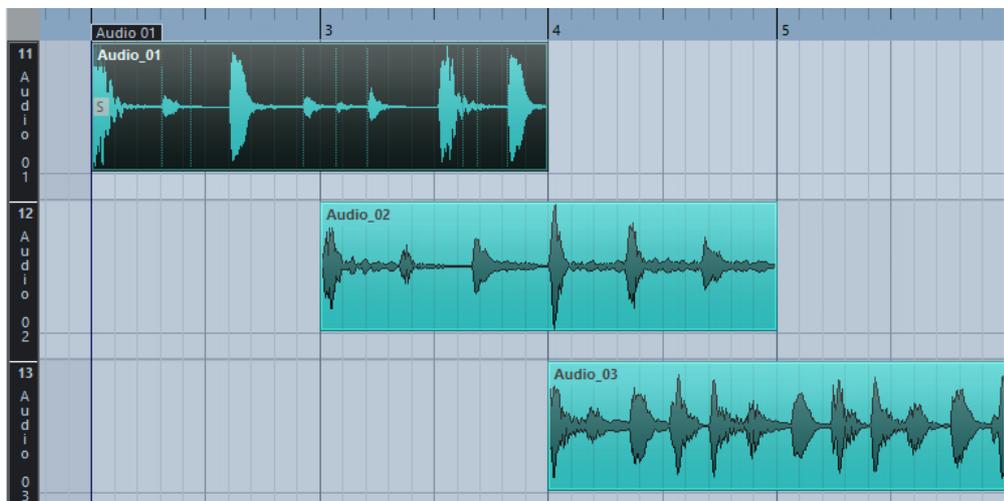
The Ruler

The ruler shows the timeline and the display format of the project.

You can select a separate display format by clicking on the arrow button on the right. Select an option from the pop-up menu.

About Lanes

Lanes can make it easier to work with several audio events in a part. Moving some of the events to another lane can make selecting and editing much easier.



If **Snap** is deactivated and you want to move an event to another lane without accidentally moving it horizontally, press **Ctrl/Cmd** while dragging it up or down.

RELATED LINKS

[Track Handling](#) on page 155

Operations

All operations can be performed in the **Audio Part Editor** window and in the lower zone editor.

Zooming, selecting and editing in the **Audio Part Editor** is done just as in the **Project** window.

NOTE

If a part is a shared copy, any editing you perform will affect all shared copies of this part.

RELATED LINKS

[Project Window](#) on page 42

[Shared Copies](#) on page 197

Auditioning in the Audio Part Editor

To audition audio parts you can use one of the following methods:

Auditioning Using the Audition Tool

You can use the audition tool to directly start a single audition of a selection or loop an audition using the **Audition Loop** function.

Clicking **Audition** on the toolbar plays back the edited audio, according to the following rules:

- If you have selected events in the part, only the section between the first and last selected event will be played back.
- If you have made a range selection, only this section will be played back.

- If there is no selection, the whole part will be played back. If the project cursor is within the part, playback starts from the current cursor position. If the cursor is outside the part, playback starts from the beginning of the part.
- If **Audition Loop** is activated, playback will continue until you deactivate **Audition**. Otherwise, the section will be played back once.

When auditioning with the **Speaker** tool or **Audition** icon, audio will be routed directly to the **Control Room** (Cubase Pro only) or to the main mix (the default output bus) if the **Control Room** is disabled. In Cubase Artist, the main mix bus is always used for auditioning.

Auditioning Using the Speaker Tool

PROCEDURE

1. Select **Speaker** on the toolbar.
2. On an audio part, click and hold at the position you want to begin auditioning from.

RESULT

You are auditioning the audio part. The audition will stop at the end of the part you had clicked on.

Auditioning Using Regular Playback

To audition from the cursor position, you can use the regular playback controls on the **Transport** panel. If you activate **Solo Editor** on the toolbar, only the events in the edited part will be played back.

Setting Up the Independent Track Loop

The independent track loop is a sort of mini-cycle, affecting only the edited part. When the loop is activated, the events in the parts that are within the loop will be repeated continuously and completely independent – other events (on other tracks) are played back as usual. The only interaction between the loop and the regular playback is that the loop starts every time the cycle starts over again.

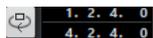
PROCEDURE

1. Activate **Independent Track Loop** on the toolbar.

NOTE

If you activate **Independent Track Loop**, the **Link Project and Lower Zone Editor Cursors** function is automatically deactivated in the lower zone editor.

If it is not visible, right-click the toolbar and add the **Independent Track Loop Settings** section.



2. **Ctrl/Cmd**-click in the ruler to set the start and **Alt**-click to set the end of the loop.

NOTE

You can also edit the loop start and end positions numerically in the fields next to the **Loop** button.

RESULT

The loop is indicated in blue in the ruler.

NOTE

The events are looped as long as the **Loop** button is activated and the **Audio Part Editor** is open.

RELATED LINKS

[Using the Setup options](#) on page 977

Scrubbing

In the **Audio Part Editor**, the **Scrub** tool has a separate icon on the toolbar. Apart from that, scrubbing works exactly as in the **Project** window.

RELATED LINKS

[Scrubbing](#) on page 188

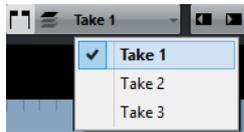
Handling Several Parts

When you open the **Audio Part Editor** with several parts selected – all on the same track or on different tracks – they might not all fit in the editor window, which can make it hard to get an overview of the different parts when editing.

Therefore, the toolbar features a few functions to make working with multiple parts easier and more comprehensive:

- The **Currently Edited Part** pop-up menu lists all parts that were selected when you opened the editor, and lets you select which part is active for editing.

When you select a part from the list, it is automatically made active and centered in the display.

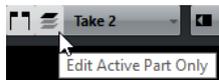


NOTE

You can also activate a part by clicking on it with the **Object Selection** tool.

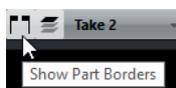
- **Edit Active Part Only** lets you restrict editing operations to the active part only.

If you select **Edit > Select > All** with this option activated, all events in the active part are selected but not the events in other parts.



- You can zoom in on an active part so that it is displayed in its entirety in the window by selecting **Edit > Zoom > Zoom to Event**.
- **Show Part Borders** can be used if you want to see clearly defined borders for the active part.

If this option is activated, all parts except the active one are grayed out, making the borders easily discernible. There are also two markers in the ruler with the name of the active part, marking its beginning and end. These can be moved freely to change the part borders.



- It is possible to cycle between parts, making them active using key commands. In the **Key Commands** dialog – Edit category, there are two functions: **Activate Next Part** and

Activate Previous Part. If you assign key commands to these, you can use them to cycle between parts.

RELATED LINKS

[Setting up key commands](#) on page 939

Controlling Sample Playback with Sampler Tracks

The sampler track features allow you to chromatically play back any audio from your audio sample library via MIDI. You can create and edit new sounds based on specific samples, and integrate them into an existing project.

The sampler track features include:

- A sampler track that allows you to control the playback of the audio sample that is loaded in **Sampler Control**.
- **Sampler Control** that allows you load and edit audio samples.

Creating Sampler Tracks

To create a sampler track, do one of the following:

- In the **Project** window, select an audio event and select **Audio > Create Sampler Track**.
- In the **MediaBay**, right-click an audio file and select **Create Sampler Track**.
- In the **Inspector** of the **Sample Editor**, open the **Range** section and click **Create Sampler Track** .

This creates a sampler track from the selected range. If no range is selected, the entire event is used.

- On the context menu of the track list, select **Add Sampler Track**.
In this case, **Sampler Control** is empty and you must load an audio sample by dragging.

Loading Audio Samples into Sampler Control

You can load audio samples into **Sampler Control** by dragging.

Cubase allows you to load mono or stereo samples in `.wav` or `.aiff` file format into **Sampler Control**.

- To load an audio sample, drag it from the **MediaBay**, the **Project** window event display, or the File Explorer/Mac OS Finder and drop it in **Sampler Control**.

IMPORTANT

If **Sampler Control** already contains an audio sample, this sample and all its settings are overwritten.

NOTE

- Audio samples that you load into **Sampler Control** are not copied to the project audio folder. If you want to archive or share your project including all audio samples that you have loaded into **Sampler Control**, you must create a self-contained project.
- In the **Pool**, all audio samples that you have loaded into **Sampler Control** are listed in a dedicated sampler track subfolder in the main audio folder.

RELATED LINKS

[Creating Self-Contained Projects](#) on page 94
[Pool](#) on page 511

Sampler Control

If the sampler track is selected, **Sampler Control** is available in the lower zone of the **Project** window. **Sampler Control** allows you to view, edit, and play back samples or specific sections of the samples.



1. Toolbar

Contains tools that allow you to select and edit the audio sample, to organize track presets, and to transfer the sample with its settings to an instrument.

2. Waveform display/Envelope editor

Shows the waveform image of the sample and allows you to define the playback range for the sample and to set a loop.

If the envelope editors for the pitch, filter, or amp section are shown, you can adjust their envelope curve settings here.

3. Sound parameter section

Allows you to make settings for time stretching and formant shifting (**AudioWarp** section), tuning and pitch modulation (**Pitch** section), filtering (**Filter** section), or level and panorama (**Amp** section).

4. Keyboard section

Allows you to set the key range of the sample, its root key, and the modulation range of the pitchbend wheel. These settings are used if you work with an external MIDI device.

RELATED LINKS

[Creating Sampler Tracks](#) on page 498
[Waveform Display](#) on page 502
[Envelope Editors](#) on page 505
[Sound Parameter Section](#) on page 503
[Keyboard Section](#) on page 507

Sampler Control Toolbar

The **Sampler Control** toolbar contains various settings and functions.

Read Automation



Allows you to read track automation.

Write Automation



Allows you to write track automation.

Event Received Indicator



This LED indicates incoming MIDI messages via the selected MIDI input. The LED lights up on receiving note-on and controller messages. This way, you can check if Cubase and your MIDI keyboard are connected to the same MIDI device input.

Snap to Zero Crossing



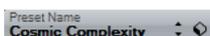
Restricts sample editing to zero crossings, that is, to positions where the amplitude is zero.

Auto-Scroll



Keeps the project cursor visible during playback.

Preset section



Shows the name of the track preset that is loaded for the sampler track. You can also save and load presets.

Import Audio File



Opens the **Import Audio** dialog that allows you to load an audio file into **Sampler Control**.

NOTE

If **Sampler Control** already contains an audio file, the original file is replaced by the new file.

File Name



Shows the file name of the sample.

Tempo



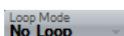
Shows the tempo of the sample.

Root Key



Shows the root key that determines the pitch of the sample. You can change the root key by entering a new value in the value field or by dragging the root key handle on the **Sampler Control** keyboard.

Loop Mode



Allows you to select a loop mode for playback via MIDI.

- If this is set to **No Loop**, the sample is played once.
- If this is set to **Continuous**, the sample is played in a continuous loop.
- If this is set to **Alternate**, the sample is played back in a loop that alternates forward and backward.
- If this is set to **Once**, the sample is looped once.
- If this is set to **Until Release**, the sample is looped repeatedly until you release the key on the keyboard.
- If this is set to **Alternate Until Release**, the loop alternates forward and backward for as long as you hold the key.

One Shot



The sample is played back once from beginning to end, regardless of any loop settings.

MIDI Reset



Stops playback and resets all MIDI controllers to their default values.

This is useful, for example, if you want to stop playback of a long audio sample in **One Shot** mode.

Fixed Pitch



If a sample is triggered by a MIDI note other than the one defined by the **Root Key** setting, the sample is pitched accordingly. If **Fixed Pitch** is activated, the relation between played note and root key is disregarded and all keys play the sample just as it was recorded.

Reverse Sample



Reverses the sample. This allows you to play back the sample backwards.

Monophonic Mode



Activates monophonic playback. For solo instruments, this usually results in a more naturally sounding performance. If monophonic playback is activated, a note that was stolen by another note is retriggered if you still hold the stolen note when you release the new one. This way, you can play trills by holding one note and quickly and repeatedly pressing and releasing another note, for example.

If this option is deactivated, you can play up to 128 notes simultaneously.

Transfer to New Instrument



Allows you to transfer the audio sample with all its **Sampler Control** settings to an instrument that is loaded to a new instrument track.

Open in Separate Window



Opens **Sampler Control** in a separate window.

To close the separate window and open **Sampler Control** in the lower zone, click **Open in Lower Zone** .

RELATED LINKS

[Sampler Track Presets](#) on page 179

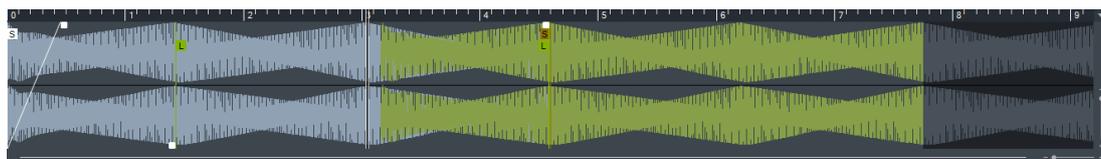
[Setting the Root Key Manually](#) on page 508

[Setting up Loops for Audio Samples](#) on page 508

[Transferring Samples from Sampler Control to VST Instruments](#) on page 509

Waveform Display

The waveform display shows the waveform of your audio sample. It allows you to define the start and end of the audio sample, of the loop, and of the fade-in/-out.



Sample Start

Defines the sample starts. On playback, all audio before the sample start is ignored.

Sample End

Defines the sample stop. On playback, all audio after the sample end is ignored.

Sustain Loop Start

Defines where the sustain loop starts.

Sustain Loop End

Defines where the sustain loop ends. When this marker is reached, playback jumps back to the sustain loop start.

Fade-In Length

Defines the fade-in length.

Fade-Out Length

Defines the fade-out length.

Sustain Loop Crossfade Length

Loop crossfades allow for smoother loops. This marker defines the length for the loop crossfade.

Ruler

The ruler shows the timeline in the specified display format.

- To select the format, click the arrow button to the right of the ruler and select an option from the pop-up menu.
You can display bars and beats, seconds, or samples.

Zooming

- To zoom in/out on the time and level axes, use the horizontal and vertical zoom sliders or the corresponding key commands.

RELATED LINKS

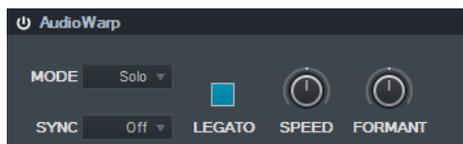
[Key Commands](#) on page 938

Sound Parameter Section

In the sound parameter section you can make settings for time stretching and formant shifting (**AudioWarp** section), tuning and pitch modulation (**Pitch** section), filtering (**Filter** section), or level and panorama (**Amp** section).

AudioWarp

In the **AudioWarp** section, you can apply time stretching and formant shifting to your samples.



- To activate the AudioWarp settings, click **Activate/Deactivate AudioWarp** .

AudioWarp Mode

- **Solo** mode offers parameters for time stretching and formant shifting. This mode is suitable for loops and samples of solo instruments or vocals.
- **Music** mode offers parameters for time stretching. This mode is suitable for complex material like drum loops and samples of mixed music. It uses considerably more CPU time than **Solo** mode.

NOTE

The more the sample is stretched, the higher the CPU load.

AudioWarp Sync Mode

Allows you to match the playback speed of the sample to the project tempo.

- If **Off** is selected, the playback speed is specified manually, in percent.
- If **Tempo** is selected, the playback speed is calculated using the ratio between the original tempo of the sample and the tempo of the host.

Legato

If this option is deactivated, each note that is played via MIDI starts playback from the **Sampler Control** position cursor.

If this option is activated, the first note starts playback from the position cursor, and any following notes start from the current playback position for as long as the first note is held.

Speed

If **AudioWarp Sync Mode** is set to **Off**, you can adjust the playback speed of the sample.

In **Music** mode, the minimum playback speed adjustment is 12.5 %. Values below this limit have no effect.

Original BPM

If **AudioWarp Sync Mode** is set to **Tempo**, you can enter the original tempo of the sample in beats per minute. The playback speed of the sample is adjusted to match the tempo of the host application.

NOTE

This parameter is only available in **Solo** and in **Music** mode. In **Music** mode, the lower limit of the playback speed adjustment is 12.5 %. Values below this limit have no further effect.

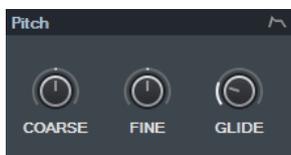
Formant

Allows you to adjust formant shifting. Formant shifting allows you to avoid so-called Mickey Mouse effects when pitch shifting a sample. This is especially useful with samples of human voices or acoustic instruments.

This parameter is only available in **Solo** mode.

Pitch

In the **Pitch** section, you can adjust the tuning and pitch of your audio sample. The pitch envelope allows you to modulate the pitch over time.



Coarse

Sets the pitch of the audio sample in semitone steps.

Fine

Fine-tunes the pitch of the audio sample in cents (hundredths of a semitone).

Glide

Specifies the time that is needed to bend the pitch of the audio sample from one note to the following note. If you move this control all the way to the left, **Glide** is deactivated.

Show/Hide Pitch Envelope

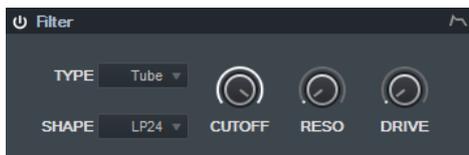
Shows the pitch envelope editor.

RELATED LINKS

[Envelope Editors](#) on page 505

Filter

In the **Filter** section, you can adjust the tone color of the sample sound. The filter envelope allows you to control the cutoff frequency to shape the harmonic content over time.



- To activate the filter settings, click **Activate/Deactivate Filter** .

Cutoff

Controls the cutoff frequency of the filter.

Resonance

Sets the filter resonance.

Drive

Determines the level of the input signal and thus the amount of saturation.

Show/Hide Filter Envelope

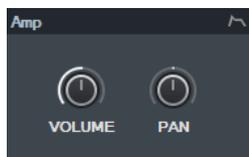
Shows the filter envelope editor.

RELATED LINKS

[Envelope Editors](#) on page 505

Amp

In the **Amp** section, you can set volume and pan of the sample. The amplifier envelope allows you to shape the volume over time.



Volume

Sets the level of the sample.

Pan

Sets the position of the sample in the stereo panorama.

Show/Hide Amp Envelope

Shows the amplifier envelope editor.

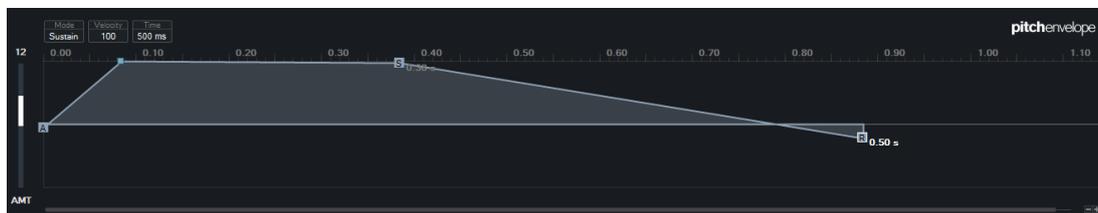
RELATED LINKS

[Envelope Editors](#) on page 505

Envelope Editors

You can adjust the **Pitch**, **Filter**, and **Amp** envelope curves. Each of these envelopes can contain up to 128 nodes.

- Click **Show/Hide Envelope**  at the top right of a section to show the corresponding envelope editor.



Pitch Envelope

Envelope Amount

Determines how much the selected envelope affects the audio. This parameter allows for positive and negative values. If the **Envelope Amount** is set to 0, the envelope has no effect.

NOTE

This parameter is only available for **Filter** and **Pitch**.

Envelope display

Shows the envelope curve. You can adjust it by adding, moving, and deleting nodes. The nodes for attack (**A**), sustain (**S**), and release (**R**) are always shown and cannot be deleted. Next to the release node, the release time of the envelope is shown.

Mode

Determines how the envelope is played back when it is triggered.

- Select **Sustain** to play the envelope from the first node to the sustain node. The sustain level is held for as long as you play the note. When you release the note, the envelope continues with the stages following the sustain. This mode is suited for looped samples.
- Select **Loop** to play back the envelope from the first node to the loop nodes. Then, the loop is repeated for as long as the key is held. When you release the note, the envelope continues playing the stages that follow the sustain. This mode is suited for adding motion to the sustain of the envelope.
- Select **One Shot** to play the envelope from the first to the last node, even if you release the key. The envelope has no sustain stage. This mode is suited for drum samples.
- Select **Sample Loop** to preserve the natural attack of the sample. The decay of the envelope does not start until the sample has reached the sample loop start.

If you set the second node to the maximum level and use the following nodes to shape the decay during the loop phase of the sample, the envelope only affects the loop phase. The attack of the envelope is still executed.

Velocity

Determines how the velocity affects the level of the envelope.

The level of the envelope depends on the velocity setting and on how hard you hit a key. Higher values increase the level of the envelope the harder you hit a key.

RELATED LINKS

[Selecting Nodes](#) on page 506

[Adding and Removing Nodes](#) on page 507

[Adjusting the Envelope Curve](#) on page 507

[Zoom Functions in the Envelope Editors](#) on page 507

Selecting Nodes

You can select single nodes or multiple nodes. Selected nodes are edited together.

- To select a node, click on it in the graphical editor.
The **Time** field at the top of the graphical envelope editor shows the parameters of the selected node.
- To add a node to a selection, **Shift**-click the node.
- To select multiple nodes, draw a rectangle around them with the mouse.
If multiple nodes are selected, the **Time** field shows the parameters of the node that is indicated by a white border.
- To select all envelope nodes, press **Ctrl/Cmd-A**.

- If the envelope editor has the keyboard focus, you can select the next or the previous node with the left and right arrow keys.

RELATED LINKS

[Keyboard Focus in the Project Window](#) on page 76

Adding and Removing Nodes

You can add up to 128 nodes to an envelope curve.

- To add a node, double-click at the position where you want to add the node.
- To remove a node, double-click it.
- To delete several selected nodes, press **Delete** or **Backspace**.

NOTE

- You cannot remove the attack (**A**), the sustain (**S**), or the release node (**R**).
 - All nodes added after the sustain node always affect the release phase of the envelope.
-

Adjusting the Envelope Curve

The envelope editor allows you to adjust the envelope curve by dragging.

- To move a node horizontally or vertically, click and drag it.
- To move the envelope curve vertically between two nodes, click and drag it.

Zoom Functions in the Envelope Editors

The vertical axis of the envelope editor displays the level. The horizontal axis displays the time.

- To zoom in or out, click the **+** or **-** buttons to the right of the scrollbar below the envelope editor or use the corresponding key commands.
- To zoom in or out at the current position, click in the timeline and drag up or down.
- To zoom to a specific region, hold **Alt**, click and drag the mouse over the region.

RELATED LINKS

[Key Commands](#) on page 938

Keyboard Section

In the keyboard section of **Sampler Control** you can set the root key and the key range of the sample, and the modulation range of the pitchbend wheel on your MIDI keyboard.



Pitchbend

Determines the maximal modulation that is applied when you move the pitchbend wheel on your MIDI keyboard. You can set the pitchbend range in semitone steps up to 12 semitones.

Virtual keyboard

Determines the root key and the key range of the sample.

RELATED LINKS

[Setting the Root Key Manually](#) on page 508

[Setting the Key Range](#) on page 509

Sample Editing and Playback Functions

All sample editing in **Sampler Control** is non destructive.

Setting Sample Start and End

By setting the sample start and end, you can define what range of the sample is played back when you press a key on your MIDI keyboard.

PROCEDURE

1. Drag the **Set Sample Start** handle to the right to adjust the sample start point.
 2. Drag the **Set Sample End** handle to the left to adjust the sample end point.
-

Setting up Loops for Audio Samples

You can set up a loop that is played back when the sample is triggered.

PROCEDURE

1. On the toolbar, click **Sample Loop Mode** and select a loop mode from the pop-up menu. The **Sustain Loop Start/End** handles and the green loop range overlay are shown.
2. Drag the **Set Sustain Loop Start/End** handles to adjust the loop start and end points. To create a smooth loop transition, try to match the shape of the green loop range overlay with the shape of the gray sample waveform.

NOTE

You cannot drag the loop start and end points outside the defined sample range.

RELATED LINKS

[Setting Sample Start and End](#) on page 508

Setting the Root Key Manually

The **Root Key** shows the original pitch of the sample. Sometimes, if the sample does not contain any root key information or if you want the sample to play at a different pitch you must set the root key manually.

NOTE

If you load a sample that does not contain any root key information, the root key is automatically set to C3.

To set the root key manually, do one of the following:

- In the keyboard section of **Sampler Control**, click and drag the root key handle.
- On the toolbar of **Sampler Control**, double-click in the **Root Key** field and enter the new root key using your computer keyboard, your mouse wheel, or your MIDI keyboard.

RELATED LINKS

[Keyboard Section](#) on page 507

[Setting the Key Range](#) on page 509

Setting the Key Range

You can determine the key range for the sample. This is useful for samples that only sound good within a certain key range.

PROCEDURE

- Adjust the key range by dragging the range handles above the virtual keyboard.

RESULT

Only keys within the determined key range play a sound when triggered.

Playing Back Samples

After you have loaded an audio sample into **Sampler Control**, you can play back the sample using an external MIDI keyboard or the virtual keyboard.

PREREQUISITE

You have loaded a sample into **Sampler Control** and made all sample editing and settings. You have installed and set up your MIDI keyboard.

PROCEDURE

1. In the track list, activate **Monitor** for the sampler track.
2. Optional: On the **Sampler Control** toolbar, activate **Fixed Pitch**.
This allows you to play back the sample in its original pitch and speed.
3. Hit some notes on your keyboard or use the virtual keyboard to play back the sample.

RESULT

If **Fixed Pitch** is deactivated, the sample is played back and the pitch is defined by the notes you play. If you hit lower keys, the sample is played back with a low pitch. If you hit higher keys, the sample is played back with a high pitch.

If **Fixed Pitch** is activated, the sample is played back in its original pitch.

AFTER COMPLETING THIS TASK

To use the sound of the edited sample in your project, create or record a MIDI event on the sampler track.

RELATED LINKS

[Virtual Keyboard](#) on page 221

[Monitoring via Cubase](#) on page 227

[MIDI Events](#) on page 186

[Basic Recording Methods](#) on page 223

[MIDI Editors](#) on page 671

Transferring Samples from Sampler Control to VST Instruments

You can transfer audio samples with all settings that you have made in **Sampler Control** to specific Steinberg VST instruments.

Transferring audio samples from **Sampler Control** to a VST instrument creates a new instrument track in the track list. This new track is added below the sampler track. The audio sample and all its settings are loaded in the VST instrument.

You can transfer audio samples from **Sampler Control** to the following Steinberg VST instruments:

- Groove Agent
- Groove Agent SE
- HALion

Transferring a Sample

PREREQUISITE

You have installed Groove Agent, Groove Agent SE, or HALion. You have loaded an audio sample in **Sampler Control**.

PROCEDURE

1. In the **Sampler Control** toolbar, click **Transfer to New Instrument**.
2. In the pop-up menu, select the instrument to which you want to transfer the sample.

RESULT

In the track list, a new instrument track is created below the sampler track. The instrument track has the same name as the sampler track. The audio sample and all its settings are loaded in the selected VST instrument.

RELATED LINKS

[Transferring a Sample](#) on page 510

Pool

Every time that you record on an audio track, a file is created on your hard disk. A reference to this file, a clip, is added to the **Pool**.

The following rules apply to the Pool:

- All audio and video clips that belong to a project are listed in the Pool.
- Every project has a separate Pool.

The way the Pool displays folders and their contents is similar to the way the File Explorer/Mac OS Finder display folders and file lists. In the Pool, you can perform operations that affect files on disk and operations that only affect clips.

Operations That Affect Files

- Importing clips (audio files can automatically be copied and/or converted)
- Converting file formats
- Renaming clips (this also renames the referenced files on disk) and regions
- Deleting clips
- Preparing file archives for backup
- Minimizing files

Operations That Affect Clips

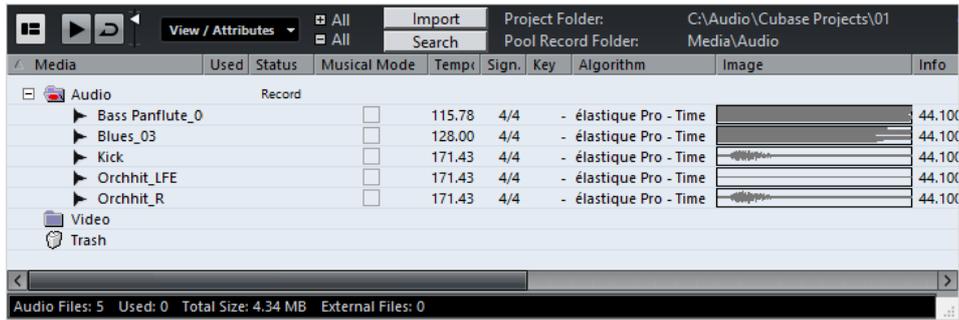
- Copying clips
- Auditioning clips
- Organizing clips
- Applying audio processing to clips
- Saving or importing complete Pool files

Pool Window

The Pool window allows you to manage the media files of the active project.

You can open the Pool in the following ways:

- On the **Project** window toolbar, click **Open Pool Window**. If this icon is not visible, you must activate the **Media & MixConsole Windows** option on the toolbar context menu.
- Select **Project > Pool**.
- Select **Media > Open Pool Window**.



The content of the Pool is divided into the following folders:

Audio Folder

Contains all audio clips and regions that are in the project.

If the projects contains one or more sampler tracks, a dedicated sampler track subfolder is created in the audio folder. This subfolder contains all clips of samples that you have loaded into **Sampler Control**.

Video Folder

Contains all video clips that are in the project.

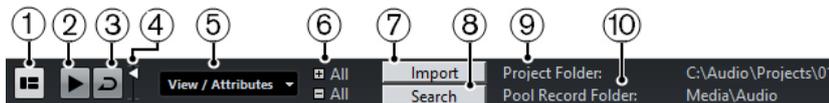
Trash Folder

Contains unused clips that have been moved here for later permanent removal from the hard disk.

NOTE

You cannot rename or delete these folders, but you can add any number of subfolders.

Toolbar



- 1. Show Info**
Activates/Deactivates the info line.
- 2. Audition**
If this option is activated and you select a clip in the Pool, it is played back.
- 3. Audition Loop**
If this option is activated, the playback of the selected clip is looped.
- 4. Volume**
Lets you specify the playback volume.
- 5. View/Attributes**
Lets you activate/deactivate which attributes are displayed in the **Pool** window.
- 6. Open/Close all folders**
Opens/Closes all folders.
- 7. Import**
Lets you import media files to the Pool.
- 8. Search**
Lets you search the Pool and connected disks for media files.

9. Project Folder

Displays the path to the folder of the active project.

10. Pool Record Folder

Displays the path to the record folder of the active project. By default, this is the `Audio` folder. However, you can create a new `Audio` subfolder and designate this as your Pool record folder.

Pool Window Columns

Various information about the clips and regions can be viewed in the Pool window columns. The columns contain the following information:

Media

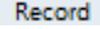
Contains the **Audio**, **Video**, and **Trash** folders. If the folders are opened, the clip or region names are shown and can be edited.

Used

Displays how many times a clip is used in the project. If there is no entry in this column, the corresponding clip is not used.

Status

Displays various icons that relate to the current Pool and clip status. The following symbols can be displayed:

- Record folder  **Record**
Indicates the current Pool record folder.
- Process 
Indicates that a clip has been processed.
- Missing 
Indicates that a clip is referenced in the project but missing from the Pool.
- External 
Indicates that the file the clip related to is external, for example, located outside the current Audio folder for the project.
- Recorded 
Indicates that the clip has been recorded in the open version of the project. This is useful for finding recently recorded clips quickly.

Musical Mode

You can use the musical mode to tempo-match audio loops to the project tempo. The checkbox in this column allows you to activate or deactivate musical mode. If the Tempo column displays "???", you must enter the correct tempo before you can activate Musical Mode.

Tempo

Displays the tempo of audio files if available. If no tempo has been specified, the column displays "???".

Sign

Displays the time signature, for example, "4/4".

Key

Displays the root key if one has been specified for the file.

Algorithm

Displays the algorithm preset that is used if the audio file is processed.

- To change the default preset, click the preset name and select another preset from the pop-up menu.

Info

For audio clips, this column displays the sample rate, bit resolution, number of channels, and length.

For regions, it displays start and end times in frames.

For video clips, it displays the frame rate, resolution, number of frames, and length.

Type

Displays the file format of the clip.

Date

Displays the date when the audio file was last changed.

Origin Time

Displays the original start position where a clip was recorded in the project. As this value can be used as a basis for the **Insert into Project** option in the **Media** or context menu, you can change it if the Origin Time value is independent (for example, not for regions).

You can change the value by editing the value in the column, or by selecting the corresponding clip in the Pool, moving the project cursor to the new position and selecting **Audio > Update Origin**.

Image

Displays waveform images of audio clips or regions.

Path

Displays the path to the location of a clip on the hard disk.

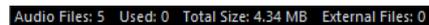
Reel Name

If you have imported an OMF file, it may include this attribute, which is then shown in this column. The Reel Name describes the reel or tape from which the media was originally captured.

Info Line

The info line displays additional information regarding the files in the pool.

- To activate the info line, click **Show Info** at the left of the toolbar.



The info line shows the following information:

Audio Files

The number of audio files in the Pool.

Used

The number of audio files in use.

Total Size

The total size of all audio files in the Pool.

External Files

The number of files in the Pool that do not reside in the project folder (for example, video files).

Customizing the View

You can set up which columns are shown or hidden and rearrange the order of the columns in the Pool.

- To specify which columns are shown or hidden, open the **View/Attributes** menu on the toolbar and activate or deactivate items.
- To rearrange the order of columns, drag a column heading to the left or right.

Working with the Pool

NOTE

Most of the Pool-related main menu functions are also available on the Pool context menu.

Renaming Clips or Regions in the Pool

IMPORTANT

Renaming clips or regions in the Pool also renames the referenced files on disk. It is recommended to rename clips or regions in the Pool. Otherwise, the reference from the clip to the file may get lost.

PROCEDURE

1. In the **Pool** window, select a clip or region, and click the existing name.
 2. Type in a new name and press **Return**.
-

RELATED LINKS

[About Missing Files](#) on page 520

Duplicating Clips in the Pool

You can create duplicates of clips and apply different processing methods to them.

NOTE

Duplicating a clip does not create a new file on disk, but a new edit version of the clip that refers to the same audio file.

PROCEDURE

1. In the **Pool** window, select the clip that you want to duplicate.
 2. Select **Media > New Version**.
-

RESULT

A new version of the clip appears in the same Pool folder. The duplicated clip has the same name as the original but with a version number after it. Regions within a clip are also copied, but keep their name.

Inserting Clips into a Project

To insert a clip into a project, you can either use the insert commands on the **Media** menu or use drag and drop.

Inserting Clips into a Project Via Menu Commands

PROCEDURE

1. In the **Pool** window, select the clips that you want to insert into the project.
2. Select **Media > Insert into Project** and select one of the insert options.
If several clips are selected, choose whether to insert them on one track or each on a different track.

NOTE

The clips are positioned so that their snap points are aligned with the selected insert position. If you want to adjust the snap point before inserting a clip, double-click a clip to open the Sample Editor. Here, you can adjust the snap position and then perform the insert options.

RESULT

The clip is inserted on the selected track or on a new audio track. If several tracks are selected, the clip will be inserted on the first selected track.

RELATED LINKS

[Adjusting the Snap Point](#) on page 447

Inserting Clips into a Project Via Drag and Drop

You can drag a clip from the **Pool** into the **Project** window.

Snap is taken into account if **Snap** is activated.

If you drag the clip into the **Project** window, the cross-hair cursor and a tooltip are shown. The tooltip indicates the timeline position where the snap point of the clip is aligned.

If you position the clip in an empty area of the track list, that is, where no track exists, a new track is created for the inserted event.

NOTE

If you press and hold **Shift** while dragging the clip from the **Pool** on an event, the clip in this event is replaced.

RELATED LINKS

[Adjusting the Snap Point](#) on page 447

[Replacing Clips in Events](#) on page 185

[Cross-Hair Cursor](#) on page 82

Deleting Clips from the Pool

You can delete clips from the **Pool** with or without deleting the corresponding file from the hard disk.

Removing Clips from the Pool

PROCEDURE

1. In the **Pool** window, select the clips that you want to remove, and select **Edit > Delete**. You can also press **Backspace** or **Delete**.
 2. Depending on whether the clips are used by an event, you have the following options:
 - If the clips are used by an event, click **Remove** and then click **Remove from Pool**.
 - If the clips are not used by an event, click **Remove from Pool**.
-

RESULT

The clips are no longer available in the **Pool** for this project, but the files still exist on the hard disk and can be used in other projects, etc. This operation can be undone.

Deleting Files from the Hard Disk

To delete a file permanently from the hard disk, you must first move the corresponding clips to the **Trash** folder in the **Pool**.

IMPORTANT

Make sure that the audio files that you want to delete are not used in other projects.

PROCEDURE

1. In the **Pool** window, select the clips that you want to delete from the hard disk, and select **Edit > Delete**. You can also press **Backspace** or **Delete**, or drag the clips into the **Trash** folder.

NOTE

You can retrieve a clip or region from the **Trash** folder by dragging it back into an **Audio** or **Video** folder.

2. Depending on whether the clips are used by an event, you have the following options:
 - If the clips are used by an event, click **Remove** and then click **Trash**.
 - If the clips are not used by an event, click **Trash**.
 3. Select **Media > Empty Trash**.
 4. Click **Erase**.
-

RESULT

The files are deleted from the hard disk.

Removing Unused Clips from the Pool

You can find all clips in the **Pool** that are not used in the project. This allows you to quickly remove all unused clips.

PROCEDURE

1. In the Pool, select **Media > Remove Unused Media**.
 2. Do one of the following:
 - To move the clips to the Trash folder, select **Trash**.
 - To remove the clips from the **Pool**, select **Remove from Pool**.
-

Removing Regions from the Pool

PROCEDURE

- In the **Pool**, select a region and select **Edit > Delete**.
You can also press **Backspace** or **Delete**.

IMPORTANT

You are not warned if the region is still in use.

Locating Events and Clips

You can quickly display to which clips the selected events belong and to which events the selected clips belong.

Locating Events via Clips in the Pool

You can find out which events in the project refer to a particular clip in the Pool.

PROCEDURE

1. In the **Pool** window, select one or more clips.
 2. Select **Media > Select in Project**.
-

RESULT

All events that refer to the selected clips are now selected in the **Project** window.

Locating Clips via Events in the Project Window

You can find out which clip belongs to a particular event in the **Project** window.

PROCEDURE

1. In the **Project** window, select one or more events.
 2. Select **Audio > Find Selected in Pool**.
-

RESULT

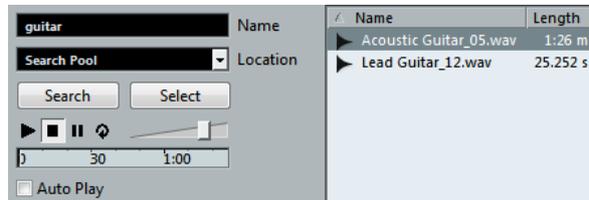
The corresponding clips are located and highlighted in the Pool.

Searching for Audio Files

The search functions help you locate audio files in the Pool, on your hard disk, or on other media. This works much like the regular file search, but with extra features.

PROCEDURE

1. In the **Pool** window, click **Search** on the toolbar.
A search pane appears at the bottom of the window, displaying the search functions.



2. Specify the files that you search for in the **Name** field.
You can use partial names or wildcards (*).

NOTE

Only audio files of the supported formats will be found.

3. Use the **Location** pop-up menu to specify where to search.
The pop-up menu lists all your local drives and removable media.
 - To limit the search to certain folders, select **Select Search Path**, and in the dialog that opens, select the folder in which you want to search.

The search will include the selected folder and all subfolders.

NOTE

Folders that you have recently selected using the **Select Search Path** function appear on the pop-up menu, so that you can quickly select them again.

4. Click **Search**.
The search is started and **Search** is labeled **Stop**.
 - To cancel the search, click **Stop**.When the search is finished, the files that are found are listed on the right.
 - To audition a file, select it in the list and use the playback controls to the left (Play, Stop, Pause, and Loop). If **Auto Play** is activated, selected files are automatically played back.
 - To import a file into the Pool, double-click the file in the list or select it and click **Import**.
 5. To close the search pane, click **Search** on the toolbar again.
-

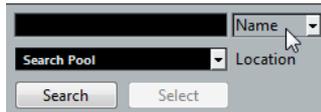
Using the Extended Search Functionality

Apart from the search criterion **Name**, additional search filters are available. The extended search options allow for a detailed search, helping you to master even the largest sound database.

PROCEDURE

1. In the **Pool** window, click **Search** on the toolbar.
The search pane is displayed in the lower part of the Pool window.

2. Click the **Name** text to open the extended search pop-up menu where you can select and define a search criterion.



The menu also contains the **Add Filter** and **Presets** submenus.

The search criteria have the following parameters:

- **Name:** partial names or wildcards (*)
 - **Size:** less than, More than, Equal, Between (two values), in seconds, minutes, hours, and bytes
 - **Bitsize** (resolution): 8, 16, 24, 32
 - **Channels:** Mono, Stereo, and from 3 to 16
 - **Sample Rate:** various values, choose **Other** for free setting
 - **Date:** various search ranges
3. Select one of the search criteria in the pop-up menu.
The search criteria changes to the selected criteria.
 4. Optional: To display more search options, open the extended search pop-up menu, select the **Add filter** submenu, and select an element.
 5. Optional: To save your search filter settings as a preset, open the extended search pop-up menu, select **Presets > Save Preset**, and enter a name for the preset.
Saved presets are added to the **Presets** submenu.
 6. Optional: To remove a search filter settings preset, open the extended search pop-up menu, select the preset, and then select **Remove Preset**.
-

Find Media Window

The **Find Media** window is a stand-alone window that offers the same functionality as the **Search Media** option in the Pool.

- To open the **Find Media** window, select **Media > Search Media**.
- To insert a clip or region into the project from the **Find Media** window, select it in the list, select **Media > Insert into Project**, and select one of the insert options.

RELATED LINKS

[Inserting Clips into a Project](#) on page 516

About Missing Files

When you open a project and one or more files are missing, the **Resolve Missing Files** dialog opens. If you click **Close**, the project opens without the missing files.

In the Pool, you can check which files are considered missing. This is indicated by a question mark in the **Status** column.

A file is considered missing under one of the following conditions:

- The file has been moved or renamed outside the program since you last worked with the project, and you ignored the **Resolve Missing Files** dialog when you opened the project for the current session.
- You have moved or renamed the file outside the program during the current session.
- You have moved or renamed the folder in which the missing files are located.

Locating Missing Files

PROCEDURE

1. Select **Media > Find Missing Files**.
 2. In the **Resolve Missing Files** dialog, decide if you want the program to find the file for you (**Search**) if you want to find it yourself (**Locate**), or if you want to specify in which directory the program will search for the file (**Folder**).
 - If you select **Search**, a dialog opens to let you specify which folder or disk will be scanned by the program. Click **Search Folder**, select a directory or a disk, and click **Start**. If found, select the file from the list and click **Accept**. Afterwards Cubase tries to map all other missing files automatically.
 - If you select **Locate**, a file dialog opens, allowing you to locate the file manually. Select the file and click **Open**.
 - If you select **Folder**, a dialog opens to let you specify the directory in which the missing file can be found. This might be the preferred method if you have renamed or moved the folder containing the missing file, but the file still has the same name. Once you select the correct folder, the program finds the file and you can close the dialog.
-

Reconstructing Missing Edit Files

If a missing file cannot be found, this is normally indicated with a question mark in the **Status** column in the Pool. However, if the missing file is an edit file (a file that is created when you process audio and stored in the Edits folder within the project folder), it may be possible for the program to reconstruct it by recreating the editing to the original audio file.

PROCEDURE

1. In the **Pool** window, locate the clips for which files are missing.
 2. Check the **Status** column. If the status of the files is "Reconstructible", the files can be reconstructed by Cubase.
 3. Select the reconstructable clips and select **Media > Reconstruct**.
-

RESULT

The editing is performed and the edit files are recreated.

Removing Missing Files from the Pool

If the Pool contains audio files that cannot be found or reconstructed, you may want to remove these.

PROCEDURE

- In the **Pool** window, select **Media > Remove Missing Files**.
-

RESULT

All missing files from the Pool and the corresponding events from the **Project** window are removed.

Auditioning Clips in the Pool

You can audition clips in the Pool using key commands, the **Audition** button, or by clicking in the waveform image for a clip.

- Key commands
If you activate the **Playback Toggle Triggers Local Preview** option in the Preferences dialog (Transport page), you can use **Space** to audition. This is the same as activating **Audition** on the toolbar.
- Select a clip and activate **Audition**.
The whole clip plays back. To stop playback, click **Audition** again.
- Click in the waveform image for a clip.
The clip plays back from the selected position in the waveform until the end. To stop playback, click **Audition** or anywhere else in the **Pool** window.

The audio is routed directly to the **Control Room** if activated (Cubase Pro only). When the Control Room is deactivated, the audio is routed to the Main Mix (the default output) bus, bypassing the settings of the audio channel, effects, and EQs. In Cubase Artist, the Main Mix bus is always used for auditioning.

NOTE

You can adjust the auditioning level with the miniature level fader on the toolbar. This does not affect the regular playback level.

If you have activated **Audition Loop** before you audition, the following happens:

- When you click **Audition** to audition a clip, the clip is repeated indefinitely until you stop playback by clicking **Audition** or **Audition Loop** again.
- When you click in the waveform image to audition, the section from the selected point to the end of the clip is repeated indefinitely until you stop playback.

Opening Clips in the Sample Editor

The Sample Editor allows you to perform detailed editing on the clip.

- To open a clip in the Sample Editor, double-click a clip waveform icon or a clip name in the **Media** column.
- To open a certain region of a clip in the Sample Editor, double-click a region in the Pool.
You can use this to set a snap point for a clip, for example. When you later insert the clip from the Pool into the project, the defined snap point allows it to be properly aligned.

RELATED LINKS

[Adjusting the Snap Point](#) on page 447

[Sample Editor](#) on page 428

Importing Media

The **Import Medium** dialog lets you import files directly into the Pool.

To open the dialog, select **Media > Import Medium**, or click **Import** on the Pool toolbar.

This opens a standard file dialog, where you can navigate to other folders, audition files, etc. The following audio file formats can be imported:

- Wave (Normal or Broadcast)
- AIFF and AIFC (Compressed AIFF)
- REX or REX 2

- FLAC (Free Lossless Audio Codec)
- SD2 (Sound Designer II) (Mac only)
- MPEG Layer 2 and Layer 3 (MP2 and MP3 files)
- Ogg Vorbis (OGG files)
- Windows Media Audio (Windows only)
- Wave 64 (W64 files)

The following characteristics are possible:

- Stereo or mono
- Any sample rate

NOTE

Files that have a different sample rate than the project sample rate are played back at the wrong speed and pitch.

- 8, 16, 24, or 32 bit float resolution
- Various video formats

NOTE

You can also use the commands on the **Import** submenu of the **File** menu to import audio or video files into the Pool.

RELATED LINKS

- [Wave Files](#) on page 896
- [Importing ReCycle files](#) on page 960
- [Importing compressed audio files](#) on page 961
- [Video File Compatibility](#) on page 926

Importing Audio CDs in the Pool

You can import tracks or sections of tracks from an audio CD directly into the Pool. This opens a dialog in which you can specify which tracks are copied from the CD, converted to audio files, and added to the Pool.

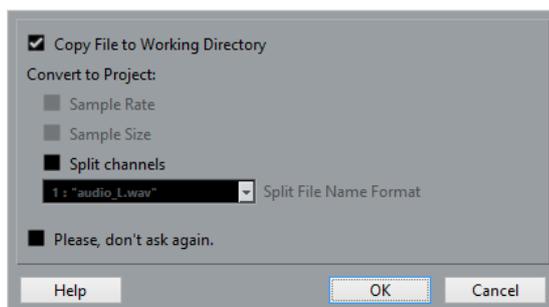
- To import an audio CD to the Pool, select **Media > Import Audio CD**.

RELATED LINKS

- [Importing audio CD tracks](#) on page 957

Import Options Dialog

When you select a file in the **Import Medium** dialog and click **Open**, the **Import Options** dialog opens.



Copy File to Working Directory

If this option is activated, the file is copied to the **Audio** folder of the project, and the clip refers to this copy.

If the option is deactivated, the clip refers to the original file in the original location and will be marked as “external” in the **Pool**.

Convert to Project

If you are importing a single audio file, you can convert the sample rate provided that the sample rate is different than the one set for the project. You can also convert the sample size provided that the sample size is lower than the record format that is used in the project.

If you are importing several audio files at once, the **Import Options** dialog contains a **Convert and Copy to Project if needed** checkbox instead. When this option is activated, the imported files will be converted only if the sample rate is different or if the sample size is lower than the project sample size.

Split Channels/Split Multi-Channel Files

If this option is activated, the stereo or multi-channel audio files are split into a corresponding number of mono files, one for each channel.

NOTE

If this option is activated, the imported files are copied to the **Audio** folder of the project’s working directory.

If you import files via **File > Import**, the split files are inserted into the project and into the **Pool** as separate mono tracks.

If you import files via **Media > Import Medium**, the split files are only inserted into the **Pool**.

In all cases, the **Split File Name Format** pop-up menu lets you specify how the split files are named. This allows for compatibility with other products when exchanging audio files and avoids confusion if the source file contains no stereo or surround material, but poly-mono audio.

Please, don’t ask again

If this option is activated, files will always be imported according to the settings that you have made, without this dialog appearing. This can be reset in the Preferences dialog (**Editing > Audio**).

NOTE

You can also convert files later with the **Convert Files** or **Conform Files** options.

RELATED LINKS

[Status](#) on page 513

[Converting Files](#) on page 528

[Conforming Files](#) on page 529

Exporting Regions as Audio Files

If you have created regions within an audio clip, these can be exported as separate audio files. If you have two clips that refer to the same audio file, you can create a separate audio file for each clip.

PROCEDURE

1. In the **Pool** window, select the region that you want to export.
2. Select **Audio > Bounce Selection**.
3. Select the folder in which you want the new file to be created and click **OK**.
4. If you are using the **Bounce Selection** option to create a separate audio file for a clip that refers to the same audio file as another clip, enter a name for the new audio file.

RESULT

A new audio file is created in the specified folder. The file has the name of the region and is automatically added to the Pool.

RELATED LINKS

[Creating Audio Events from Regions](#) on page 446

Changing the Pool Record Folder

All audio clips that you record in the project will end up in the **Pool Record** folder. The **Pool Record** folder is indicated by the text Record in the Status column and by a dot on the folder itself.

By default, this is the main Audio folder. However, you can create a new Audio subfolder and designate this as your **Pool Record** folder.

NOTE

The folders that you create in the **Pool** are only for organizing your files in the **Pool**. All files are recorded to the folder that you specified as the **Pool Record** Folder.

PROCEDURE

1. In the **Pool**, select the Audio folder or any audio clip.

NOTE

You cannot designate the Video folder or any of its subfolders as the **Pool Record** folder.

2. Select **Media > Create Folder**.
3. Rename the new folder.
4. Select the new folder and select **Media > Set Pool Record Folder**, or click in the **Status** column of the new folder.

RESULT

The new folder becomes the **Pool Record** folder. Any audio recorded in the project will be saved in this folder.

Organizing Clips and Folders

If you accumulate a large number of clips in the Pool, it can be difficult to quickly find specific items. Organizing clips in new subfolders with names that reflect the content can be a solution. For example, you could put all sound effects in one folder, all lead vocals in another, etc.

PROCEDURE

1. In the **Pool** window, select the type of folder, audio or video, for which you want to create a subfolder.

NOTE

You cannot put audio clips in a video folder and vice versa.

2. Select **Media > Create Folder**.
 3. Rename the folder.
 4. Drag the clips to the new folder.
-

Applying Processing to Clips in the Pool

You can apply audio processing to clips from within the Pool in the same way as to events in the **Project** window.

PROCEDURE

1. In the **Pool** window, select the clips that you want to process.
 2. Select **Audio > Process** and select a processing method.
-

RESULT

A waveform symbol indicates that the clips have been processed.

RELATED LINKS

[Audio Processing and Functions](#) on page 397

Undoing Processing

You can undo processing that has been applied to clips.

PROCEDURE

1. In the **Pool** window, select the clip from which you want to remove the processing.
 2. Select **Audio > Offline Process History**.
 3. Select the action that you want to remove, and click **Remove**.
-

Minimizing Files

You can minimize the audio files according to the size of the audio clips referenced in the project. The files that are produced using this option only contain the audio file portions that are actually used in the project.

This can significantly reduce the size of the project if large portions of the audio files are unused. Therefore, the option is useful for archiving purposes after you have completed a project.

IMPORTANT

This operation will permanently change the selected audio files in the Pool. This cannot be undone. If you only want to create the minimized audio files as a copy, leaving the original project untouched, you can use the **Back up Project** option.

NOTE

Minimizing files clears the entire edit history.

PROCEDURE

1. In the **Pool** window, select the files that you want to minimize.
 2. Select **Media > Minimize File**.
 3. Click **Minimize**.
After the minimizing is finished, the file references in the stored project have become invalid.
 4. Do one of the following.
 - To save the updated project, click **Save Now**.
 - To proceed with the unsaved project, click **Later**.
-

RESULT

Only the audio portions that are actually used in the project remain in the corresponding audio files in the Pool Record folder.

RELATED LINKS

[Backing Up Projects](#) on page 95

Importing and Exporting Pool Files (Cubase Pro only)

You can import or export a Pool as a separate file (file extension “.npl”).

- To import a Pool file, select **Media > Import Pool**.
When you import a Pool file, its file references are added to the current Pool.

NOTE

Since the audio and video files are only referenced but not saved in the Pool file, the Pool import is only useful if you have access to all referenced files. These files have preferably the same file paths as when the Pool was saved.

- To export a Pool file, select **Media > Export Pool**.

You can also save and open libraries, that is, stand-alone Pool files that are not associated with a project.

RELATED LINKS

[Working with Libraries \(Cubase Pro only\)](#) on page 527

Working with Libraries (Cubase Pro only)

You can use libraries to save sound effects, loops, video clips, etc., and transfer media from a library into a project by using drag and drop.

- To create a new library, select **File > New Library**.

You must specify a project folder for the new library in which media files will be stored. The library appears as a separate Pool window.

- To open a library, select **File > Open Library**.
- To save a library, select **File > Save Library**.

Converting Files

In the Pool, you can convert files to another format.

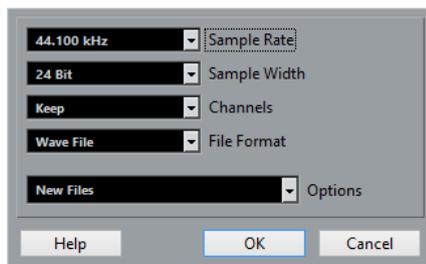
PROCEDURE

1. In the **Pool** window, select the files that you want to convert.
 2. Select **Media > Convert Files**.
 3. In the **Convert Options** dialog, make your settings and click **OK**.
-

Convert Options Dialog

In this dialog, you can convert audio files in the Pool.

To open the **Convert Options** dialog, select a clip in the **Pool** window, and select **Media > Convert Files**.



Sample Rate

Allows you to convert to another sample rate.

Sample Width

Allows you to convert to 16 Bit, 24 Bit, or 32 Bit Float.

Channels

Allows you to convert to Mono or Stereo Interleaved.

File Format

Allows you to convert to Wave, AIFF, Wave 64, or Broadcast Wave format.

Options

You can use the **Options** pop-up menu to set one of the following options:

- **New Files**
Creates a copy of the file in the audio folder and converts this new file according to the chosen attributes. The new file is added to the Pool, but all clip references still point to the original, unconverted file.
- **Replace Files**
Converts the original file without changing clip references. However, the references are saved with the next save action.
- **New + Replace in Pool**

Creates a new copy with the chosen attributes, replaces the original file with the new one in the Pool and redirects the current clip references from the original file to the new file. Select the latter option if you want your audio clips to refer to the converted file, but want to keep the original file on disk, for example, if the file is used in other projects.

Conforming Files

You can align the file attributes with the project attributes. This is useful if the attributes of the selected files are different from the project attributes.

PROCEDURE

1. In the **Pool** window, select the clips that you want to conform.
2. Select **Media > Conform Files**.
3. Select whether to keep or replace the original unconverted files in the Pool.
 - If you select the **Replace** option, files in the Pool and in the Audio folder of the project are replaced.
 - If any **Keep** option is selected, original files remain in the Audio folder of the project and new files are created.

RESULT

The files are conformed. Clip or event references in the Pool are redirected to the conformed files.

Extracting Audio from Video File

You can extract audio from video files. This automatically generates a new audio clip that appears in the Pool Record folder.

NOTE

This function is not available for MPEG-1 video files.

PROCEDURE

1. In the **Pool** window, select **Media > Extract Audio from Video File**.
2. Select the video file from which you want to extract audio and click **Open**.

RESULT

The audio is extracted from the video file. The audio file gets the same file format and sample rate/width as in the current project, and the same name as the video file.

MediaBay

The **MediaBay** allows you to manage all your media files and presets from multiple sources.

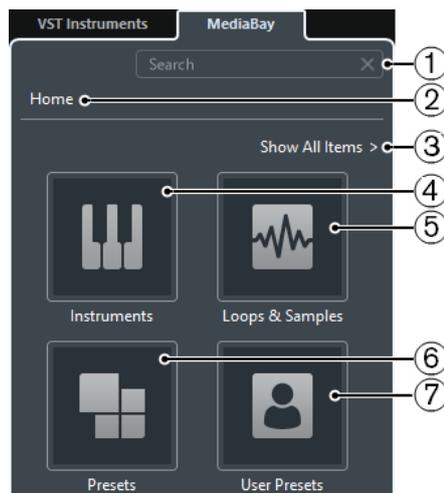
MediaBay in Right Zone

You can open the **MediaBay** in the right zone of the **Project** window. This is useful, if you want to access the **MediaBay** functions from within a fixed zone of the **Project** window.

To open the **MediaBay** in the right zone, do the following:

- Click **Show/Hide Right Zone**  on the **Project** window toolbar, and at the top of the right zone, click the **MediaBay** tab.

The **MediaBay** in the right zone is divided into the following sections:



1. **Search**
Allows you to search media files by name or by attribute.
2. **Home**
Allows you to go back to the initial tiles view.
3. **Show All Items**
Allows you to show the results list for the selected tile. If no tile is selected, all media files that are contained in the selected **Browse Location** are shown.
4. **Instruments Tile**
Click this tile to show the presets for the included VST instruments.
5. **Loops & Samples Tile**
Click this tile to show audio loops, MIDI loops or instrument sounds ordered by content set.
6. **Presets Tile**

Click this tile to show the track presets, strip presets, pattern banks, FX chain presets, and VST FX presets.

7. User Presets Tile

Click this tile to show the track presets, strip presets, pattern banks, FX chain presets, VST FX presets, and instrument presets that are listed in the folder **VST Sound > User Content**.

RELATED LINKS

[Showing/Hiding Zones](#) on page 43

[Locations Section](#) on page 534

[Browsing the Locations](#) on page 534

[Results Section](#) on page 535

[Previewer Section](#) on page 540

[Filters Section](#) on page 545

[Loading Loops and Samples](#) on page 554

[Loading Track Presets](#) on page 555

[Loading Instrument Presets](#) on page 555

[Loading Effect Plug-In Presets](#) on page 556

[Loading FX Chain Presets](#) on page 556

[Loading Strip Presets](#) on page 556

[Loading Pattern Banks](#) on page 557

MediaBay Window

To open the **MediaBay** in a separate window, do one of the following:

- Select **Media > MediaBay**.
- Press **F5**.



MediaBay

The **MediaBay** is divided into the following sections:

1. Define Locations

Allows you to create presets for locations on your system that you want to scan for media files.

2. Locations

Allows you to switch between the previously defined locations.

3. Filters

Allows you to filter the results list using a logical or an attribute filter.

4. Results

Displays all found media files. You can filter the list and perform text searches.

5. Previewer

Allows you to preview the files shown in the results list.

6. Attribute Inspector (Cubase Pro only)

Allows you to view, edit, and add media file attributes or tags.

RELATED LINKS

[Define Locations Section](#) on page 533

[Locations Section](#) on page 534

[Filters Section](#) on page 545

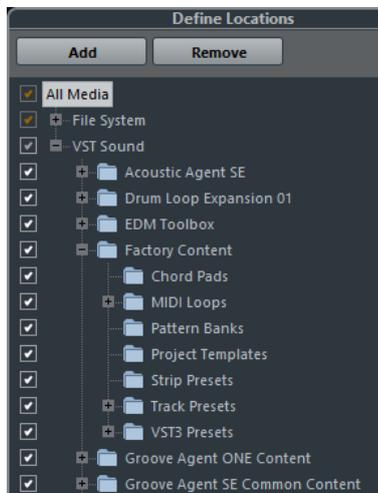
[Results Section](#) on page 535

[Previewer Section](#) on page 540

[Attribute Inspector](#) on page 549

Define Locations Section

In the **Define Locations** section, you can specify which folders or directories you want to include in the scan for media files. To do so, activate/deactivate the checkboxes for the folders.



The color of the checkmark helps you to identify which folders and subfolders are scanned:

- White indicates that all subfolders are scanned.
- Orange indicates that at least one subfolder is excluded from the scan.
To revert to scanning a complete folder including all subfolders, click on an orange checkmark.

In the **Define Locations** section you can also specify which folders are shown as browse locations in the **Select Defined Browse Location** pop-up menu.

- To define a folder as location and add it to the **Select Defined Browse Location** pop-up, select the folder and click **Add**.
- To remove a location from the **Select Defined Browse Location** pop-up, select it and click **Remove**.

NOTE

The **Define Locations** is not available in the **MediaBay** in the right zone.

VST Sound Node

The **VST Sound** node is a shortcut to your user content and the factory content files, including the preset folders.

The folders below the **VST Sound** node represent the directories in which content files and track presets, VST presets, etc. are stored by default.

Scanning Your Content

You can specify which folders or directories you want to include in the scan.

- To include a folder in the scan, activate its checkbox.
- To exclude a folder from the scan, deactivate its checkbox.
- To restrict the search to individual subfolders, activate/deactivate their checkboxes.

The scan result is saved in a database file. When you deactivate the checkbox for a folder that has already been scanned, a message appears, allowing you to keep the gathered scan data in this database file or to completely remove the data for this folder from the database file.

- To keep the database entries and exclude the folder from being scanned, select **Keep**.
- To remove the contents from the database, select **Remove**.

All files that are found in the specified folders are shown in the **Results** list.

Updating the MediaBay

When you have made changes or modified attributes of your user content, you must update the **MediaBay**. You can update the **MediaBay** by rescanning or by refreshing. The factory content is updated automatically.

If you have made changes to your content and want the changes to be displayed in the **MediaBay** you must rescan the corresponding media folders.

- To rescan the selected folder and its subfolders, right-click a folder and select **Rescan Disk**.
- To rescan only the folders that have changed since the last scan, right-click in the **Define Locations** section, and select **Quick Rescan Disk**.

If you have modified attribute values or mapped a new network, you must refresh the corresponding folders.

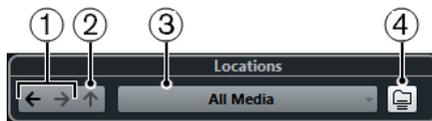
- To refresh a folder, in the **Define Locations** section of the **MediaBay** right-click a folder, and select **Refresh Views**.
- To display a new network drive, in the **Define Locations** section of the **MediaBay** right-click the parent node, and select **Refresh Views**. You can then scan the drive for media files.

RELATED LINKS

[Editing Attributes \(Tagging\)](#) on page 550

Locations Section

When you open the **Select Defined Browse Location** pop-up menu and select a location, the media files that are found in that location are shown in the **Results** list. By switching between the locations you defined, you can quickly browse to the files you are looking for.



- 1. Previous/Next Browse Location**
Selects the previous/next browse location.
- 2. Browse Containing Folder**
Opens the parent location of the selected folder.
- 3. Select Defined Browse Location**
The following location presets are available by default:
All Media, Local Harddisks, VST Sound, Factory Content, User Content, Cubase Projects, Documents, Desktop, Music.
- 4. Deep Results**
If this option is activated, the media files that are located in the subfolders of the selected location are also displayed in the results list.

Browsing the Locations

You can quickly switch between different locations.

- To change the browse location, select another location from the **Select Defined Browse Location** pop-up menu.

If the available locations do not include the files that you want to display or if the folder that you want to scan for files is not part of any of the locations, add a new location in the **Define Locations** section.

- To select the previous or next folder, click **Previous Browse Location** or **Next Browse Location**. These paths are deleted when you close the **MediaBay**.
- To select the parent folder of the selected folder, click **Browse Containing Folder**.
- To show the files contained in the selected folder and any subfolders, activate **Deep Results**. If this button is deactivated, only the folders and files contained in the selected folder are shown.

Defining Locations

You can define locations, that is, shortcuts to the folders that you want to work with. These are shown in the Locations section.

PREREQUISITE

Set up the **Define Locations** section and scan the content.

NOTE

The **Define Locations** is not available in the **MediaBay** in the right zone.

PROCEDURE

1. In the **Define Locations** section in the **MediaBay**, select the folder that you want to define as a location.
2. Click **Add**.
3. Accept the default name or enter a new name.
4. Click **OK**.
The new location is added to the **Select Defined Browse Location** pop-up menu in the **Locations** section.
5. Repeat these steps to add as many locations as you want.

AFTER COMPLETING THIS TASK

Once you have set up your locations, you can hide the **Define Locations** section from view, to save screen space.

Results Section

The **Results** list shows all media files that are found in the selected location.



The screenshot shows a window titled "Results" with a search bar and a list of audio files. The list has columns for Name, Rating, Media Type, Tempo, PlugIn Name, and Family Name. The files listed are all audio files with a tempo of 152.000 and a family name of Willow Crest 152 BPM D.

Name	Rating	Media Type	Tempo	PlugIn Name	Family Name
▶ Willow Crest-EGtr-Pwr1-Bridge		Audio	152.000		Willow Crest 152 BPM D
▶ Willow Crest-EGtr-Pwr1-Chorus A		Audio	152.000		Willow Crest 152 BPM D
▶ Willow Crest-EGtr-Pwr1-Chorus B		Audio	152.000		Willow Crest 152 BPM D
▶ Willow Crest-EGtr-Pwr1-Fill1		Audio	152.000		Willow Crest 152 BPM D
▶ Willow Crest-EGtr-Pwr1-Fill2		Audio	152.000		Willow Crest 152 BPM D
▶ Willow Crest-EGtr-Pwr2-Bridge		Audio	152.000		Willow Crest 152 BPM D

NOTE

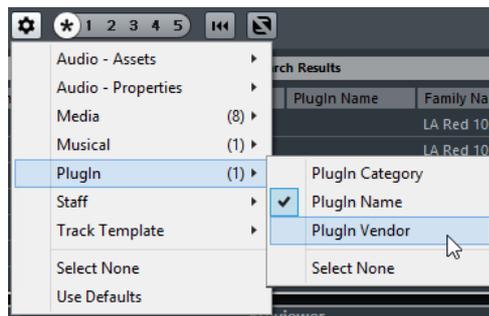
You can set the maximum number of files that are displayed in the **Results** list in the **MediaBay Settings**.

Setting Up the Results List Columns

For each media type, or for combinations of media types, you can specify the attribute columns that are displayed in the **Results** list.

PROCEDURE

1. In the **Results** section of the **MediaBay**, select the media types that you want to make settings for.
2. Click **Set up Result Columns** and activate or deactivate the options on the submenus.



To exclude a particular category, select **Select None** on the corresponding submenu. If **Allow Editing in Results List** is activated in the **MediaBay Settings** dialog, you can also edit attributes in the **Results** list. Otherwise, this is only possible in the **Attribute Inspector**.

Managing Media Files in the Results List

NOTE

The **Define Locations** is not available in the **MediaBay** in the right zone.

- To move or copy a file from the **Results** list to another location, drag it to another folder in the **Define Locations** section.
- To change the order of the columns in the **Results** list, click on a column header, and drag that header to another position.
- To delete a file, right-click it in the list and select **Delete**. The file is permanently deleted from your computer.

IMPORTANT

If you delete a file using the File Explorer/Mac OS Finder, it is still displayed in the **Results** list, although it is no longer available to the program. To remedy this, re-scan the corresponding folder.

Shuffling the Results List

You can display the **Result** list entries in a random order.

- To shuffle the **Results** list, click **Shuffle Results**  in the **MediaBay**.

Finding the Location of a File

You can open the File Explorer/Mac OS Finder to show the location of a file on your system.

NOTE

This function is not available in the in the **MediaBay** in the right zone or for files which are part of a VST Sound archive.

PROCEDURE

- In the **Results** list, right-click a file, and select **Show in Explorer/Reveal in Finder**.
-

RESULT

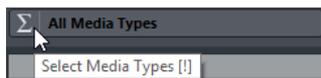
The File Explorer/Mac OS Finder opens and the corresponding file is highlighted.

Filtering According to Media Type

You can set up the **Results** list to display only a particular media type or a combination of media types.

PROCEDURE

1. In the **Results** section, click **Select Media Types**.



2. In the **Show Media Types** dialog, activate the media types that you want to be displayed in the **Results** list.

When you have filtered the list to show a particular media type, this is indicated by the corresponding icon to the left of **Select Media Types** button. When you have selected several media types, the **Mixed Media Type** icon is used.

Show Media Types Selector

You can activate the media types that you want to be displayed in the **Results** list.



The following media types are available:

Audio Files

If this option is activated, the list shows all audio files. The supported formats are .wav, .w64, .aiff, .aifc, .rex, .rx2, .mp3, .mp2, .ogg, .sd2 (Mac OS only), .wma (Windows only).

MIDI Files

If this option is activated, the list shows all MIDI files (file name extension .mid).

MIDI Loops

If this option is activated, the list shows all MIDI loops (file name extension .midiloop).

Pattern Banks

If this option is activated, the list shows all pattern banks (file name extension .patternbank). Pattern banks are generated via the MIDI plug-in **Beat Designer**. For more information, see the separate PDF document **Plug-in Reference**.

Track Presets

If this option is activated, the list shows all track presets for audio, MIDI, and instrument tracks (file name extension .trackpreset). Track presets are a combination of track settings, effects, and **MixConsole** settings that can be applied to new tracks of various types.

Plug-in Presets

If this option is activated, the list shows all VST presets for instrument and effect plug-ins. Furthermore, EQ presets that you save in the **MixConsole** are listed. These presets contain all parameter settings for a particular plug-in. They can be used to apply sounds to instrument tracks and effects to audio tracks.

Strip Presets

If this option is activated, the list shows all strip presets (file name extension .strippreset). These presets contain channel strip effect chains.

FX Chain Presets

If this option is activated, the list shows all effect chain presets (file name extension .fxchainpreset). These presets contain insert effect chains.

Video Files

If this option is activated, the list shows all video files.

Projects

If this option is activated, the list shows all project files (from Cubase, Nuendo, Sequel): .cpr, .npr, .steinberg-project.

RELATED LINKS

[Previewing Pattern Banks](#) on page 544

[Track Presets](#) on page 177

[Saving/Loading Strip Presets](#) on page 338

[Saving/Loading EQ Presets](#) on page 330

[Saving/Loading FX Chain Presets](#) on page 328

[Video File Compatibility](#) on page 926

Filtering According to Rating

With the **Rating Filter**, you can filter files according to their rating. This allows you to exclude files from the search according to their quality.

NOTE

The **Rating Filter** is not available in the **MediaBay** in the right zone.

PROCEDURE

1. In the **Results** section of the **MediaBay**, drag the **Rating Filter** to the left or right.



2. To display all media files regardless of their rating, click the asterisk.

Performing a Text Search

You can perform a text search in the **Results** list. If you enter text in the text search field, only media files whose attributes match the entered text are displayed.

NOTE

The **Search Results** field has the same function as the **matches** operator of the logical filter. However, the search is applied to all file attributes.

- Click in the field and enter the text that you want to find.
For example, if you are looking for all audio loops relating to drum sounds, enter “drum” in the search field. The search results contain loops with names, such as “Drums 01”, “Drumloop”, “Snare Drum”, etc. In addition, all media files with the **Drum&Percussion** category attribute or any other attribute that contains “drum” are found. You can also add apostrophes to find exact matches for the entered words and use boolean operators.



- To reset the text search, delete the text.

RELATED LINKS

[Logical Filter](#) on page 545

Boolean Text Search

You can perform advanced searches, using boolean operators or wildcards.

The following elements can be used:

And [+]

[a and b]

When entering strings separated by “and” (or a plus sign), all files are found that contain both a and b.

[And] is the default setting when no boolean operator is used, for example, you can also enter [a b].

Or [,]

[a or b]

When entering strings separated by “or” (or a comma), files are found that contain either a or b, or both.

Not [-]

[not b]

When entering text preceded by “not” (or a minus sign), all files not containing b will be found.

Parentheses [()]

[(a or b) + c]

Using parentheses, you can group text strings. In this example, files are found that contain c and either a or b.

Quotation marks [“ ”]

[“example text”]

With quotation marks, you can define sequences of several words. Files are found if they contain this sequence of words.

IMPORTANT

When you are searching for files whose name contain a hyphen, put the search text in quotation marks. Otherwise the program treats the hyphen as the boolean operator “not”.

NOTE

These operators can also be used for logical filtering.

RELATED LINKS

[Applying a Logical Filter](#) on page 546

Resetting the Results List

You can reset all filter settings and filter results.

- To reset the **Results** list, click **Reset Result Filters**  in the **MediaBay**.

Previewer Section

You can preview individual files in the **Previewer** section to find out which one to use in your project.

The elements visible in this section and their functions depend on the media type.

IMPORTANT

The **Previewer** section is not available for video files, project files, and audio track presets. You can preview track presets in the preset browser.

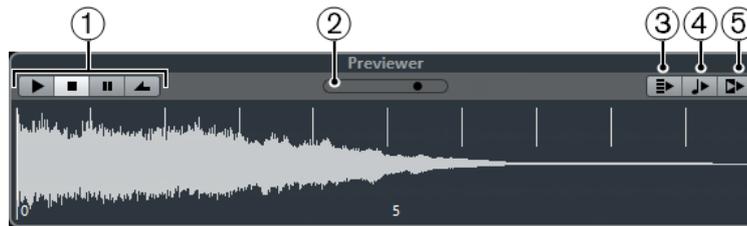
NOTE

Some **MediaBay** preferences affect the playback of media files.

RELATED LINKS

[MediaBay Settings](#) on page 561

Previewing Audio Files



- 1. Transport Controls**
Let you start, stop, pause, and cycle the preview.
- 2. Preview Level Fader**
Lets you specify the preview level.
- 3. Auto Play New Results Selection**
If this option is activated, the selected file is automatically played back.
- 4. Align Beats to Project**
If this option is activated, the selected file is played back in sync with the project, starting at the project cursor position. Note that this can apply realtime time stretching to your audio file.

NOTE

If you import an audio file into your project for which **Align Beats to Project** is activated in the **Previewer, Musical Mode** is automatically activated for the corresponding track.

- 5. Wait for Project Play**
If this option is activated, the play and stop functions from the **Transport** panel are synchronized with the play and stop buttons in the **Previewer** section.
To use this option to its full extent, set the left locator at the beginning of a bar, then start playing back the project using the **Transport** panel. The loops that you now select in the **Results** list will start together with the project in perfect sync.

Previewing MIDI Files

IMPORTANT

To preview a MIDI file, you must select an output device from the **Output** pop-up menu.



- 1. Transport Controls**
Allows you to start and stop the preview.
- 2. Preview Level Fader**
Allows you to specify the preview level.
- 3. Output**

Allows you to select the output device.

4. Auto Play New Results Selection

If this option is activated, the selected file is automatically played back.

5. Align Beats to Project

If this option is activated, the selected file is played back in sync with the project, starting at the project cursor position. Note that this can apply realtime time stretching to your MIDI file.

NOTE

If you import a MIDI file into your project for which **Align Beats to Project** is activated in the **Previewer**, **Musical Mode** is automatically activated for the corresponding track.

Previewing MIDI Loops

NOTE

MIDI loops are always played back in sync with the project.



1. Transport Controls

Lets you start and stop the preview.

2. Preview Level Fader

Lets you specify the preview level.

3. Auto Play New Results Selection

If this option is activated, the selected file is automatically played back.

4. Link Playback to Chord Track

If this option is activated, the events of the MIDI loop are transposed to play back in context with the chord track. Note that you need a chord track with chord events for this.

If this option is activated, and you insert a MIDI loop into the project, **Follow Chord Track** is automatically activated for the track.

Previewing VST Presets and Track Presets for MIDI and Instrument Tracks

To preview track presets for MIDI or instrument tracks and VST presets you need some MIDI notes. These notes can be sent to the track preset via MIDI Input, using a MIDI file, the **Memo Recorder** mode, or via the computer keyboard.



Virtual keyboard in keyboard display mode.

1. Transport Controls

Let you start and stop the preview.

2. Previewer Sequence Mode Menu

Lets you load a MIDI file to apply the selected preset to the MIDI file. You can also select the **Memo Recorder** mode that continually repeats a given sequence of notes as a loop.

3. Preview Level Fader

Lets you specify the preview level.

4. Virtual Keyboard

You can display the virtual keyboard in the keyboard display mode or in the piano display mode.

5. Computer Keyboard Input

If this option is activated, you can use your computer keyboard to preview the presets.

RELATED LINKS

[Previewing Presets Using the Memo Recorder Mode](#) on page 543

[Virtual Keyboard](#) on page 221

Previewing Presets Via MIDI Input

MIDI input is always active, for example, when a MIDI keyboard is connected to your computer and set up properly, you can directly start playing the notes to preview the selected preset.

Previewing Presets Using a MIDI File

PROCEDURE

1. On the **Previewer Sequence Mode** pop-up menu, select **Load MIDI File**.
2. In the file dialog that opens, select a MIDI file and click **Open**.
The name of the MIDI file is displayed on the pop-up menu.
3. Click **Play** to the left of the pop-up menu.

RESULT

The notes received from the MIDI file are played back with the settings of the track preset applied.

NOTE

The recently used MIDI files are kept on the menu, for quick access. To remove an entry from this list, select it on the menu and then select **Remove MIDI File**.

Previewing Presets Using the Memo Recorder Mode

The **Memo Recorder** mode continually repeats a given sequence of notes as a loop.

NOTE

You cannot use the **Memo Recorder** mode when previewing presets using a MIDI file.

PROCEDURE

1. On the **Previewer Sequence Mode** pop-up menu, select **Memo Recorder**.
2. Activate **Play**.
3. Play some notes on the MIDI keyboard or on the computer keyboard.

RESULT

The notes are played back with the preset settings applied.

When you stop playing notes and wait for 2 seconds, the note sequence that you played until this moment is played back in a continuous loop.

To use another sequence, start entering notes again.

Previewing Presets Via the Computer Keyboard

NOTE

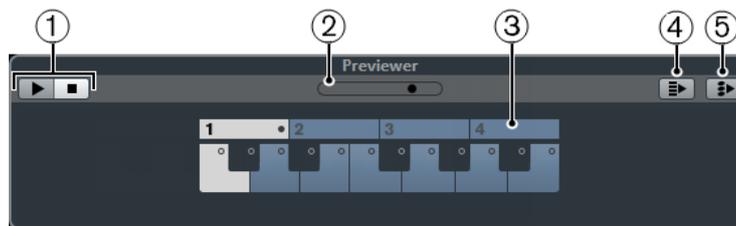
If you activate **Computer-Keyboard Input**, the computer keyboard is used exclusively for the **Previewer** section. However, you can still use the following key commands: **Ctrl/Cmd-S** (Save), **Num *** (Start/Stop Record), **Space** (Start/Stop Playback), **Num 1** (Jump to left locator), **Delete** or **Backspace**, **Num /** (Cycle on/off), and **F2** (Show/Hide Transport panel).

PROCEDURE

1. Activate **Computer-Keyboard Input**.
 2. Play some notes on the computer keyboard.
-

Previewing Pattern Banks

Pattern banks containing drum patterns can be created with the MIDI plug-in **Beat Designer**.



1. **Transport Controls**
Let you start and stop the preview.
2. **Preview Level Fader**
Lets you specify the preview level.
3. **Keyboard**
The keyboard allows you to preview the selected pattern bank. In the **Previewer** section, choose a subbank (the number at the top) and pattern (a key), and click **Play**.
One pattern bank contains 4 subbanks which in turn contain 12 patterns each.
Subbanks can contain empty patterns. Selecting an empty pattern in the **Previewer** section has no effect. Patterns containing data are indicated by a circle in the upper part of the key in the display.
4. **Auto Play New Results Selection**
If this option is activated, the selected file is automatically played back.
5. **Link Playback to Chord Track**
If this option is activated, the events of the MIDI loop are transposed to play back in context with the chord track. Note that you need a chord track with chord events for this.
If this option is activated, and you insert a MIDI loop into the project, **Follow Chord Track** is automatically activated for the track.

NOTE

Detailed information on the **Beat Designer** and its functions can be found in the separate PDF document **Plug-in Reference** in the chapter **MIDI effects**.

Filters Section

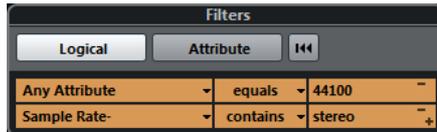
With the **MediaBay**, you can perform very refined file searches. You have two possibilities: **Logical** or **Attribute** filtering.

Logical Filter

The logical filter allows you to set up complex search conditions that must be met to find files.

NOTE

The **Logical Filter** is not available in the **MediaBay** in the right zone.



contains

The search result must contain the text or number specified in the text field to the right.

matches words

The search result must match the words specified in the text field to the right.

omits

The search result must not contain the text or number specified in the text field to the right.

equals

The search result must correspond exactly to the text or number specified in the text field to the right, including any file extension. Text searches are not case-sensitive.

>=

The search result must be higher than or equal to the number specified in the field to the right.

<=

The search result must be lower than or equal to the number specified in the field to the right.

is empty

Use this option to find files for which certain attributes have not been specified yet.

matches

The search result must include the text or number entered in the text field to the right. You can also use boolean operators. Add apostrophes to find exact matches for the entered words, for example 'drum' AND 'funky'. This option allows for a very advanced text search.

in range

If this option is selected, you can specify a lower and an upper limit for the search result in the fields to the right.

Applying a Logical Filter

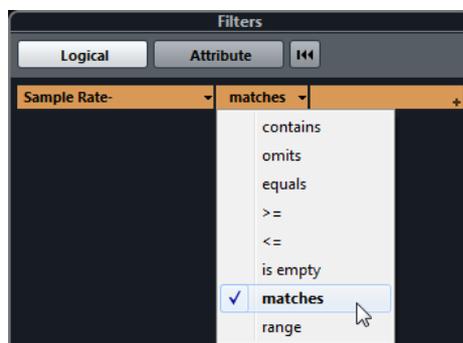
To quickly find certain audio files, you can search for a specific file attribute value, for example.

PREREQUISITE

In the **Locations** section, select the location in which you want to search for files.

PROCEDURE

1. In the **Filters** section, activate **Logical**.
2. Click in the leftmost field, to open the **Select Filter Attributes** dialog.
3. Select the attributes that you want to use.
If you select more than one attribute, the files found match either one or the other attribute.
4. Click **OK**.
5. On the condition pop-up menu, select one of the search operators.



6. Enter the text or number that you want to find in the field to the right.

NOTE

If you enter 2 or more strings or filter lines, the files that are found match all strings or filter lines.

- To add more than one string in the text field, enter a **Space** between them.
 - To add another filter line, click **+** to the right of the text field. You can add up to seven filter lines in which you can define further search conditions.
 - To remove a filter line, click **-**.
 - To reset all search fields to their default settings, click **Reset Filter** in the top right corner of the **Filters** section.
-

RESULT

The **Results** list is automatically updated, showing only the files that correspond to your search conditions.

Advanced Text Search

You can perform very advanced text searches using boolean operators.

PREREQUISITE

In the **Locations** section, select the location in which you want to search for files.

PROCEDURE

1. In the **Filters** section, activate **Logical**.

2. Select an attribute on the **Select Filter Attributes** pop-up menu or leave the setting on **Any Attribute**.
 3. Set the condition to **matches**.
 4. Specify the text that you want to search for in the field to the right using boolean operators.
-

RELATED LINKS

[Performing a Text Search](#) on page 539

About Attributes for Media Files

Attributes for media files are sets of meta data providing additional information on the file.

The different types of media files have different attributes. For example, `.wav` audio files have attributes like name, length, size, sample rate, content set, etc., while `.mp3` files have additional attributes such as artist or genre.

RELATED LINKS

[Attribute Inspector](#) on page 549

Attribute Filter

Assigning attribute values to your files makes it easy to organize the media files. With the **Attribute** filter, you can view and edit some of the standard file attributes found in your media files.

If you click **Attribute**, the **Filters** section displays all values found for a specific attribute. Selecting one of these values displays a list of files that contain this attribute value.



1. Attribute columns

Let you select different attribute categories. If the columns are wide enough, the number of files that match this criteria is displayed to the right of the filter name.

2. Attribute values

Displays the attribute values and how often a certain attribute value is available among your media files.

NOTE

- Some attributes are directly linked to each other. For example, for each category value, there are certain sub category values available. Changing the value in one of these attribute columns displays different values in the other column.
 - Each attribute column displays only the attribute values found in the selected location.
-

RELATED LINKS

[Attribute Inspector](#) on page 549

Applying an Attribute Filter

With the **Attribute** filter you can quickly find audio files with certain attributes.

- To apply an **Attribute** filter, click on an attribute value. The **Results** list is filtered accordingly. Apply more attribute filters to restrict the result even more.
- To find files that match either one or the other attribute, **Ctrl/Cmd**-click different attribute values in the same column.
- To change the displayed attribute values of a column, click on the attribute column and select another attribute.

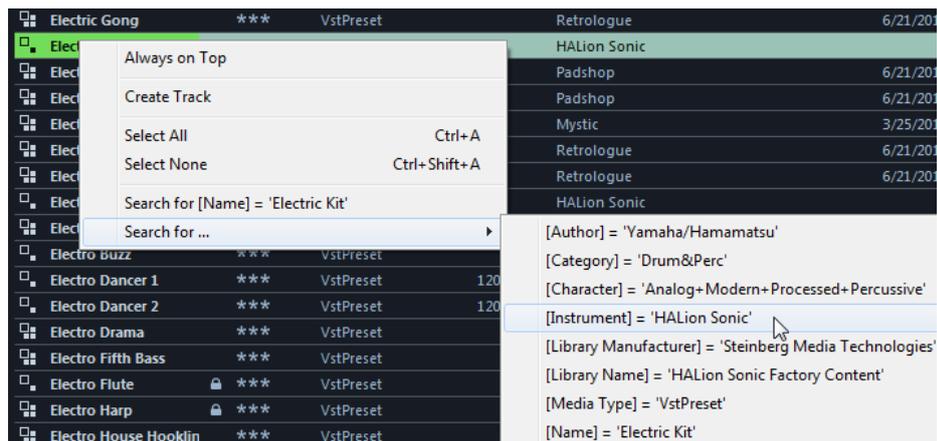
NOTE

Character attributes always form an AND condition.

Performing a Context Menu Search

You can search for other files with the same attribute as the selected. This way you can easily find all the files that have a value in common, for example, if you want to view all files that were created on the same day.

- In the **Results** list or the **Attribute Inspector**, right-click a file, and select the attribute value that you want to search for from the **Search for** submenu.



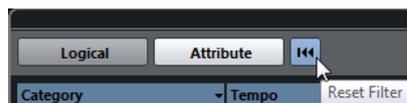
The **Filters** section automatically switches to **Logical** filtering and the corresponding filter condition line is displayed.

- To reset the filter, click **Reset Result Filters**.

Resetting the Filter

PROCEDURE

- To reset the filter, click **Reset Filter** at the top of the **Filters** section.



This also resets the **Results** list.

Attribute Inspector

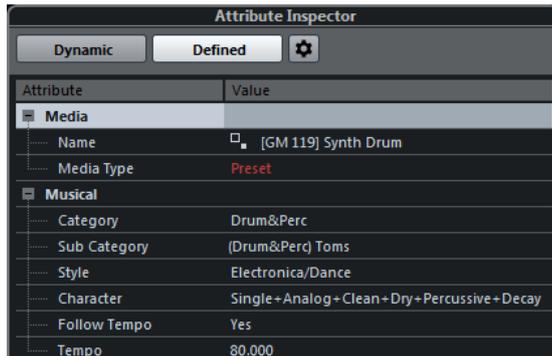
When you have selected one or more files in the **Results** list, the **Attribute Inspector** shows a list of attributes and their values.

NOTE

The **Attribute Inspector** is not available in the **MediaBay** in the right zone.

In the **Attribute Inspector**, you can also edit and add new attribute values.

The available attributes are divided into several groups (Media, Musical, Preset, etc.), so as to keep the list manageable and make it easy to find an element quickly.



Dynamic

Displays all available values for the selected files.

Defined

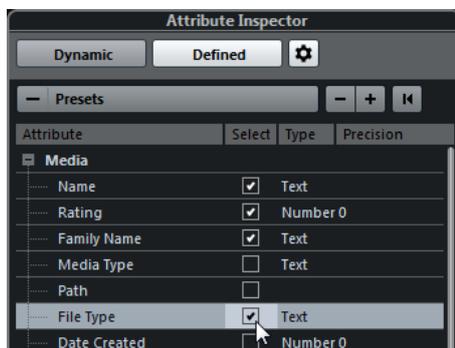
Displays a configured set of attributes for the selected media type regardless of whether corresponding values are available for the selected files.

Configure Defined Attributes

Activates the configuration mode in which you can set up the attributes that are displayed in the **Attribute Inspector**.

Configuration Mode

When you click **Configure Defined Attributes**, the configuration mode is enabled.



Select Media Types

Lets you select one or several media types. You can then manage which attributes are displayed in the **Attribute Inspector** for the selected media types.

+/-

Opens the **Add User Attribute** dialog, where you can add or remove custom user attributes. You can select the **Attribute Type** and the **Display Name**.

Reset to Default

Resets the attribute list to the default settings.

Attribute

Shows the attribute name.

Select

Shows whether an attribute is activated or deactivated.

Type

Shows whether the value for an attribute is a number, text, or a Yes/No switch.

Precision

Shows the number of decimals displayed for number attributes.

RELATED LINKS

[About Attributes for Media Files](#) on page 547

[Managing Attribute Lists](#) on page 552

Color Schemes in the Attribute Inspector

The color of an attribute value indicates if and in which form you can edit an attribute.

White

One or more files are selected in the **Results** list, and they have the same values.

Yellow

Multiple files are selected in the **Results** list, and their values differ.

Orange

Multiple files are selected in the **Results** list, with differing values, and which cannot be edited.

Red

One or more files are selected in the **Results** list, whose values cannot be edited.



Information on the meaning of the colors used in the **Attribute Inspector** are also displayed in a tooltip when you move the mouse pointer over one of the color icons below the **Attribute Inspector**.

Editing Attributes (Tagging)

The search functions, especially the attribute filter, are a powerful media management tool when making extensive use of tagging, for example, when adding and editing attributes.

Media files are usually organized in complex folder structures to provide a logical way of guiding the user to certain files, with the folder and/or file names indicating the instrument, style, tempo, etc.

Tags help you finding a particular sound or loop in such a folder structure.

Editing Attributes in the Attribute Inspector

In the **Attribute Inspector**, you can edit attribute values of the various media files. Attribute values can be chosen from pop-up lists, entered as text or numbers, or set to Yes or No.

NOTE

- Changing an attribute value in the **Attribute Inspector** permanently changes the corresponding file unless the file is write-protected or part of a VST Sound archive.
 - Some attributes cannot be edited. If this is the case, the file format probably does not permit changing this value, or changing a particular value makes no sense. For example, you cannot change the file size in the **MediaBay**.
-

PROCEDURE

1. In the **Results** list, select the file that you want to make settings for.
The corresponding attribute values are displayed in the **Attribute Inspector**.
You can also select several files and make settings for them simultaneously. The only exception is the name attribute, which must be unique for every file.
 2. In the **Attribute Inspector**, click in the **Value** column for an attribute.
Depending on the selected attribute, the following happens:
 - For most of the attributes, a pop-up menu opens from which you can choose a value. This can be a name, a number and an on/off state. Some of the pop-up menus also have a "more..." entry to open a window with more attribute values.
 - For the **Rating** attribute, you can click in the **Value** column and drag left or right to modify the setting.
 - For the **Character** attribute (Musical group), the **Edit Character** dialog opens. Click a radio button on the left or the right side and then click **OK** to define values for the **Character** attribute.
 3. Set the attribute value.
To remove the attribute value from the selected files, right-click in the corresponding **Value** column and select **Remove Attribute** from the context menu.
-

Editing Attributes in the Results List

You can edit attributes directly in the **Results** list. This allows you to assign tags to a number of loop files, for example.

PREREQUISITE

Allow Editing in Results List must be activated in the **MediaBay Settings**.

PROCEDURE

1. In the **Results** list, select the files for which you want to make settings.
You can make settings for several files simultaneously. The only exception is the name attribute, which must be unique for every file.
 2. Click in the column for the value that you want to change and make the settings.
-

RELATED LINKS

[MediaBay Settings](#) on page 561

Editing Attributes of Multiple Files Simultaneously

You can tag multiple files at the same time. There is no limit as to how many files can be tagged at the same time, but the tagging of a large amount of files in one go can take a while.

The tagging operation is executed in the background, so that you can continue with your work as usual. By looking at the **Attribute Counter** above the **Results** list, you can see how many files still have to be updated.

Editing Attributes of Write-Protected Files

Media files can be write-protected due to a number of reasons. The content can be provided by someone who write-protected the files, the file format could restrict write operations by the **MediaBay**, etc.

In the **MediaBay**, the write protection status of files is shown as an attribute in the **Attribute Inspector** and in the **Write Protection** column in the **Results** list.



IMPORTANT

You can define attribute values of write-protected files in the **MediaBay**. These changes are not written to disk though and occur in the **MediaBay** only.

NOTE

If the **Write Protection** and/or the **Pending Tags** columns are not visible, activate the corresponding attributes for the file type in the **Attribute Inspector**.

- To set or remove the write protection attribute for a file, right-click the file in the **Results** list and select **Set/Remove Write Protection**.
This is only possible if the file type allows write operations and you have the necessary operation system permission.
- When you specify attribute values for a file that is write-protected, this is reflected in the **Pending Tags** column next to the **Write Protection** column in the **Results** list.
If you rescan the **MediaBay** content and a media file on your hard disk has changed since the last scan, the pending tags for this file will be lost.
- If a file has pending tags, and you want to write the corresponding attributes to the file, you must remove the write protection, then right-click the file, and select **Write Tags to File**.

NOTE

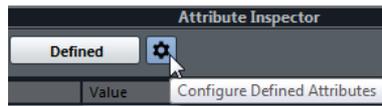
If you use other programs than Cubase to change the write-protection status of a file, you must rescan the files in the **MediaBay** to reflect these changes.

Managing Attribute Lists

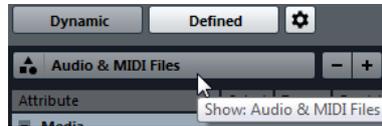
In the **Attribute Inspector**, you can define which attributes are displayed in the **Results** list and in the **Attribute Inspector** itself. For different media types, individual attribute sets can be configured.

PROCEDURE

1. In the **Attribute Inspector**, click **Defined**.
2. Click **Configure Defined Attributes** to enter configuration mode.



3. Open the **Show** pop-up menu, activate the media types that you want to display, and click anywhere in the **MediaBay**.



The **Attribute Inspector** now shows a list of all attributes available for these media types.

- If you have activated more than one media type, your settings affect all selected types. An orange checkmark indicates that the current display settings for an attribute differ for the selected media types.
 - The display settings made for the **Mixed Media Types** option are applied if you select files of different media types in the **Results** list or the **Attribute Inspector**.
4. Activate the attributes that you want to be displayed.
You can edit several attributes in one go.
 5. Click **Configure Defined Attributes** again to exit the configuration mode.

Defining User Attributes

You can define your own attributes and save these in the **MediaBay** database and the corresponding media files. Cubase recognizes all user attributes that are included in media files.

PROCEDURE

1. In the **Attribute Inspector**, activate **Defined**.
2. Click **Configure Defined Attributes** to enter configuration mode.



3. Click **+**.
4. In the **Add User Attribute** dialog, specify the **Attribute Type** and the **Display Name**.
The display name must be unique in the attribute list. The **Database Name** field indicates if a certain name is valid or not.
5. Click **OK**.

RESULT

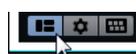
The new attribute is added to the list of available attributes and is displayed in the **Attribute Inspector** and the **Results** list.

Setting Up the MediaBay

You can show and hide the different sections of the **MediaBay**. This saves screen space and enables you to display only the information that you need.

PROCEDURE

1. Click **Set up Window Layout** in the lower left corner of the **MediaBay**.



A pane appears, containing checkboxes for the different sections.



2. Deactivate the checkboxes for the sections that you want to hide.
You can also use key commands for this: use the **Up Arrow**, **Down Arrow**, **Left Arrow**, **Right Arrow** keys to step through the checkboxes and press **Space** to activate/deactivate the selected checkbox.
 3. When you are done, click outside the pane to exit the setup mode.
-

Working With the MediaBay

When working with many music files, the most important thing is to find the content that you need quickly and easily.

The **MediaBay** helps you to find and organize your content. After scanning your folders, all media files of the supported formats that have been found are listed in the **Results** section.

The first thing to do is to set up **Locations**, that is, folders or directories on your system that contain media files. Usually, files are organized in a specific way on your computer. You might have folders reserved for audio content, folders for special effects, folders for combinations of sounds making up the ambience noise that you need for a certain film take, etc. These can all be set as different **Locations** in the **MediaBay**, allowing you to limit the files available in the **Results** list according to context.

Whenever you expand your computer system, you should save the new volumes as **Locations** or add them to your existing Locations.

By using the search and filter options, you can narrow down the results.

You can insert the files into your project by using drag & drop, by double-clicking, or by using the context menu options.

Using Media Files

The **MediaBay** window and the **MediaBay** in the right zone of the **Project** window offer you multiple possibilities to search for specific files, loops, samples, presets, and patterns that you can use in your project.

Once you have found that media file that you were looking for, you can load it into your project.

Loading Loops and Samples

PROCEDURE

1. Do one of the following
 - In the **MediaBay**, open the media types selector, click **MIDI Files**, **Audio Files**, or **MIDI Loops** and select a media file.
 - In the **MediaBay** in the right zone, click the **Loops & Samples** tile and click the following tiles until you can select the media file in the **Results** list.
2. Do one of the following:

- Double-click the media file to create a new instrument or audio track with the file loaded.
 - Drag the media file and insert it on a track in the event display.
-

RESULT

The media file is inserted on the newly created track or at the drop position.

RELATED LINKS

[Show Media Types Selector](#) on page 537

Loading Track Presets

PROCEDURE

1. Do one of the following
 - In the **MediaBay**, open the media types selector, click **Track Presets** and select a preset.
 - In the **MediaBay** in the right zone, click the **Presets > Track Presets** tile and click the following tiles until you can select the preset in the **Results** list.
 2. Do one of the following:
 - Double-click the track preset to create a new track with the preset loaded.
 - Drag the track preset and drop it on a track to apply the preset to the track.
-

RESULT

The preset is applied to the track and all settings of the preset are loaded.

RELATED LINKS

[Show Media Types Selector](#) on page 537

Loading Instrument Presets

PROCEDURE

1. Do one of the following
 - In the **MediaBay**, open the media types selector, click **Plug-in Presets** and select a preset for an instrument plug-in.
 - In the **MediaBay** in the right zone, click the **Instruments** tile and click the following tiles until you can select the preset in the **Results** list.
 2. Do one of the following:
 - Double-click the instrument preset to create a new instrument track with the instrument preset loaded.
 - Drag the instrument preset and drop it on an instrument track to apply the preset to the track.
-

RESULT

The instrument is loaded as a track instrument and the preset is applied to the instrument track.

RELATED LINKS

[Show Media Types Selector](#) on page 537

Loading Effect Plug-In Presets

PROCEDURE

1. Do one of the following
 - In the **MediaBay**, open the media types selector, click **Plug-in Presets** and select a preset.
 - In the **MediaBay** in the right zone, click the **Presets > VST FX Presets** tile and click the following tiles until you can select the preset in the **Results** list.
 2. In the **Project** window, select an audio track.
 3. Drag the plug-in preset from the **MediaBay** and drop it on the open **Inserts** section of the **Inspector**.
-

RESULT

The effect plug-in preset is applied to the audio track and the settings are loaded.

RELATED LINKS

[Show Media Types Selector](#) on page 537

Loading FX Chain Presets

PROCEDURE

1. Do one of the following
 - In the **MediaBay**, open the media types selector, click **FX Chain Presets** and select a preset.
 - In the **MediaBay** in the right zone, click the **Presets > FX Chain Presets** tile and click the following tiles until you can select the preset in the **Results** list.
 2. In the **Project** window, select an audio track.
 3. Drag the preset from the **MediaBay** and drop it on the open **Inserts** section of the **Inspector**.
-

RESULT

The fx chain preset is applied to the track and all settings of the preset are loaded. Any inserts that were loaded before are overwritten.

RELATED LINKS

[Show Media Types Selector](#) on page 537

Loading Strip Presets

PROCEDURE

1. Do one of the following
 - In the **MediaBay**, open the media types selector, click **Strip Presets** and select a preset.
 - In the **MediaBay** in the right zone, click the **Presets > Strip Presets** tile and click the following tiles until you can select the preset in the **Results** list.
 2. In the **Project** window, select an audio track.
 3. Drag the preset from the **MediaBay** and drop it on the open **Strip** section of the **Inspector**.
-

RESULT

The strip preset is applied to the track and all settings of the preset are loaded.

RELATED LINKS

[Show Media Types Selector](#) on page 537

[Saving/Loading Strip Presets](#) on page 338

Loading Pattern Banks

PROCEDURE

1. Do one of the following
 - In the **MediaBay**, open the media types selector, click **Pattern Banks** and select a preset.
 - In the **MediaBay** in the right zone, click the **Presets > Pattern Banks** tile and click the following tiles until you can select the preset in the **Results** list.
 2. Do one of the following:
 - Double-click the pattern bank to create a new instrument track with the preset loaded.
 - Drag the pattern bank and drop it on an instrument track to apply it to the track.
-

RESULT

Groove Agent is loaded as a track instrument. A drum map is loaded for the instrument track, an instance of the **Beat Designer** is loaded as insert effect.

RELATED LINKS

[Show Media Types Selector](#) on page 537

Working with MediaBay-Related Windows

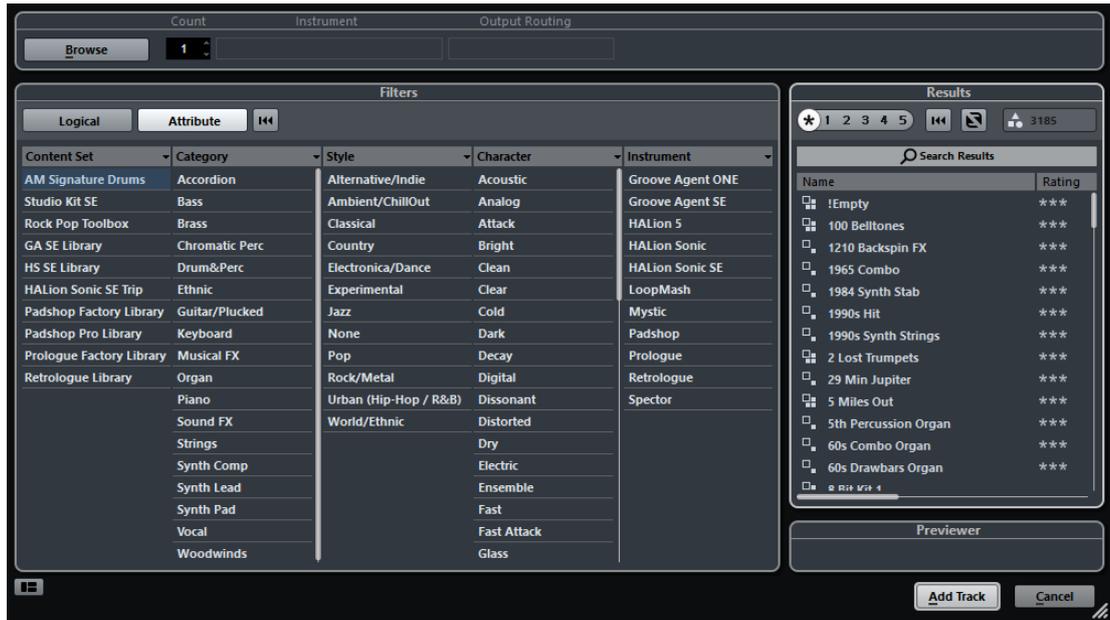
The **MediaBay** concept can be found throughout the program, for example, when adding new tracks or when choosing presets for VST instruments or effects. The workflow in all **MediaBay**-related windows is the same as in the **MediaBay**.

Adding Tracks

If you add a track by selecting **Project > Add Track**, the following dialog opens:



Click **Browse** to expand the dialog to show the **Results** list. Only file types that can be used in this context are shown.



Loop Browser, Sound Browser, and Mini Browser

The **Loop Browser**, **Sound Browser**, and **Mini Browser** show different views of the **MediaBay**.

The **Loop Browser** lets you quickly browse your loops, for example, audio files, pattern banks, and MIDI loops.

The **Sound Browser** lets you quickly search sounds. By default, it is set to display track presets and plug-in presets.

The **Mini Browser** is perfect to be placed along instruments like LoopMash or Groove Agent SE.

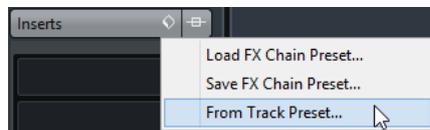
These browser windows offer the same functions as the **MediaBay**, for example, you can specify different browse locations, define searches, set up the available panes, etc.

Applying Track Presets

You can choose from a variety of track presets.

PROCEDURE

1. In the **Inspector**, click the **Preset Management** icon on the right of the **Inserts** section.



2. Select **From Track Preset**.
3. In the **Results** browser, double-click a track preset to apply it.

RELATED LINKS

[Track Presets](#) on page 177

Applying Instrument Presets

When working with VST instruments, you can choose from a variety of presets via the **Results** browser.

PROCEDURE

1. In the track list, right-click the instrument track and select **Load Track Preset**.
2. In the **Results** browser, double-click a preset to apply it.

Instrument Presets Results Browser

The **Results** browser for instrument track presets lets you preview VST presets and apply them to your instrument track.

To open the **Results** browser, right-click an instrument track, and select **Load Track Preset**.



VST presets for instruments can be divided into the following groups:

Presets

Presets contain the settings of the entire plug-in. For multi-timbral instruments, this means the settings for all sound slots as well as the global settings.

Programs

Programs contain only the settings for one program. For multi-timbral instruments, this means only the settings for one sound slot.

Working With Volume Databases

Cubase stores all media file information used in the **MediaBay**, such as paths and attributes, in a local database file on your computer. However, in some cases, it might be necessary to browse and manage this kind of metadata on an external volume.

For example, a sound editor might have to work both at home and in a studio, on two different computers. Therefore, the sound effects are stored on an external storage medium. To be able to connect the external device and directly browse its contents in the **MediaBay** without having to scan the device, you have to create a volume database for the external device.

Volume databases can be created for drives of your computer or for external storage media. They contain the same kind of information about the media files on these drives as the regular **MediaBay** database.

NOTE

When you launch Cubase, all available volume databases are automatically mounted. Databases that are made available while the program is running have to be mounted manually.

Rescanning and Refreshing Volume Databases

If you have modified the scan settings on a different system, you must rescan or refresh the **MediaBay**.

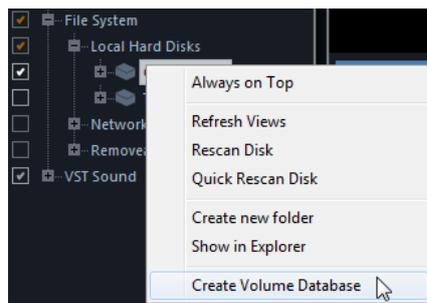
RELATED LINKS

[Updating the MediaBay](#) on page 534

Creating a Volume Database

PROCEDURE

- In the **Define Locations** section, right-click the external storage medium, drive, or partition of your computer system that you want to create a database for, and select **Create Volume Database**.

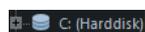


IMPORTANT

You must select the topmost directory level for this. You cannot create a database file for a lower-level folder.

RESULT

The file information for this drive is written into a new database file. When the new database file is available, this is reflected by the symbol to the left of the drive name.



NOTE

If the drive contains a large amount of data, this process may take a while.

Volume databases are automatically mounted when Cubase is launched. They are shown in the **Define Locations** section and their data can be viewed and edited in the **Results** list.

Removing a Volume Database

If you have worked on another computer using an external hard disk and return to your own computer and connect the external device again as part of your system setup, you do not need

a separate volume database for it any more. Any data on this drive can then be included in the local database file again, by removing the extra database file.

PROCEDURE

- In the **Define Locations** section, right-click the volume database and select **Remove Volume Database**.

RESULT

The metadata is integrated in the local **MediaBay** database file and the volume database file is deleted.

NOTE

If the drive contains a large amount of data, this process may take a while.

Mounting and Unmounting Volume Databases

Volume databases that are made available while Cubase is running must be mounted manually.

- To mount a volume database manually, right-click the external storage medium, drive, or partition of your computer system that you want to mount and select **Mount Volume Database**.
- To unmount a volume database, right-click it and select **Unmount Volume Database**.

MediaBay Settings

The **Preferences** dialog in Cubase contains a special **MediaBay** page where you can set up the **MediaBay**. These settings are also available from within the **MediaBay**.

- To display the preferences, click **MediaBay Settings** in the lower left corner of the **MediaBay**.



Show Managed Locations Only

If this option is activated, all folders that are not scanned for files are hidden. This keeps the tree view in the Define Locations section less cluttered.

Use Current Selection as Base Location

If this option is activated, only the selected folder and its subfolders are shown.

Scan Folders only when MediaBay is open

If this option is activated, Cubase only scans for media files when the **MediaBay** window is open.

If this option is deactivated, the folders are scanned in the background even when the **MediaBay** window is closed. However, Cubase never scans folders while playing back or recording.

Maximum Items in Results List

Specifies the maximum number of files that are displayed in the **Results** list. This avoids unmanageably long lists of files.

NOTE

The **MediaBay** does not warn you if the maximum number of files has been reached. There might be situations where a certain file you are looking for cannot be found because the maximum number of files was reached.

Allow Editing in Results List

If this option is activated, you can edit attributes in the **Results** list. If this option is deactivated, attributes can only be edited in the **Attribute Inspector**.

Show File Extensions in Results List

If this option is activated, file name extensions are displayed in the **Results** list.

Scan unknown File Types

When scanning for media files, the **MediaBay** ignores files with an unknown file extension. If this option is activated, the **MediaBay** tries to open and scan any file in the search location and ignores those files that cannot be recognized.

MediaBay Key Commands

You can display the available **MediaBay** key commands from within the **MediaBay** window. This is useful if you want to get a quick overview over the assigned and the available **MediaBay** key commands.

- To open the key commands pane, click **Key Commands** in the lower left corner of the **MediaBay**.



- To close the key commands pane, click anywhere outside of the pane.
- To assign or modify a key command, click the corresponding key command.

RELATED LINKS

[Key Commands](#) on page 938

Surround Sound (Cubase Pro only)

Cubase has integrated surround sound features with support for several formats. This support goes all the way through the audio path: all audio-related channels (i. e. audio and instrument tracks as well as group channels) and busses can handle multi-channel speaker configurations. A channel in the MixConsole can either carry complete surround mixes, or an individual speaker channel which is part of a surround setup.

Cubase offers the following surround-related features:

- Audio-related tracks can be routed freely to surround channels.
- The VST MultiPanner plug-in is automatically applied to audio-related tracks with a mono or stereo configuration that are routed to output channels with a multi-channel configuration (other than stereo). It is available in the Inspector and MixConsole and can be used to graphically position channels in the surround field.
- The MixConvert V6 plug-in is used to convert a surround channel into a different format if the corresponding input/output configuration is not handled by the VST MultiPanner. Cubase places MixConvert V6 automatically where needed. Furthermore, the plug-in is described in detail in the separate PDF document **Plug-In Reference**.
- Cubase supports surround-specific plug-ins, that is, plug-ins with multi-channel support specifically designed for surround sound mixing tasks (the included “Mix6to2” plug-in is an example of this). Furthermore, any VST 3 plug-in features multi-channel support and can therefore be used in a surround configuration, even if it was not specifically designed for surround. All plug-ins are described in the separate PDF document **Plug-in Reference**.
- You configure Cubase for surround sound by defining input and output busses in the desired surround format and specifying which audio inputs and outputs are used for the different channels in the busses.

RELATED LINKS

[Using VST MultiPanner on page 566](#)

[Using the MixConvert V6 plug-in on page 577](#)

[Preparations on page 565](#)

[Insert Effects in Multi-Channel Configurations \(Cubase Pro only\) on page 378](#)

Deliverables

The result of a surround mix in Cubase is either the multi-channel audio sent from the surround output bus to your dubber, or (if you use the Export Audio Mixdown feature) audio file(s) on your hard disk. Exported surround mixes can either be split (one mono file per speaker channel) or interleaved (a single file containing all the surround channels).

Available surround configurations

The following surround configurations are supported in Cubase:

LRCS

LRCS refers to Left Right Center Surround, where the surround speaker is center-rear positioned. This is the original surround format that first appeared as Dolby Stereo in cinema and later as the home cinema format Dolby ProLogic.

5.0

This is the same as 5.1 (see below) but without the LFE channel. The LFE channel is optional in 5.1 and if you do not plan to use it, you might find this option more convenient.

5.1

This format is one of the most popular in cinema and DVD. In its various cinema and DVD encoding implementations (established by different manufacturers) it is referred to as Dolby Digital, AC-3, DTS and MPEG 2 Multichannel. 5.1 has 1 center speaker (mainly used for speech) and 4 surround speakers (for music and sound effects). Additionally a subchannel (LFE – Low Frequency Effects) with lower bandwidth is used for special low frequency effects.

LRC

Same as LRCS, but without the surround speaker channel.

LRS

Left-Right-Surround, with the surround speaker positioned at center-rear.

LRC+LFE

Same as LRC but with an LFE subchannel added.

LRS+LFE

Same as LRS but with an LFE subchannel added.

Quadro

The original Quadraphonic format for music, with one speaker in each corner. This format was intended for vinyl record players.

LRCS+LFE

Same as LRCS but with an LFE subchannel added.

Quadro+LFE

Same as Quadro but with an LFE subchannel added.

6.0 Cine

A Left-Right-Center front speaker arrangement with 3 (Left-Right-Center) surround channels.

6.0 Music

This uses 2 (Left/Right) front channels with Left and Right surround channels and Left and Right Side channels.

Preparations

Output bus configuration

Before you can start working with surround sound, you have to configure a surround output bus, through which all the speaker channels of the selected surround format are routed.

RELATED LINKS

[Adding Input and Output Busses](#) on page 31

Child busses

A child bus is a bus within a (wider) bus. The most obvious application of a child bus is to create stereo busses within your surround bus – this allows you to route stereo tracks directly to a stereo speaker pair within the surround bus. You may also want to add child busses in other surround formats (with fewer channels than the “parent bus”).

Once you have created a surround bus, you can add one or several child busses to it by right-clicking the bus and selecting “Add Child Bus”.

RELATED LINKS

[Adding Child Busses \(Cubase Pro only\)](#) on page 32

Routing

You can use the Routing rack in the MixConsole to route audio-related tracks to output busses or group channels with a surround configuration.

RELATED LINKS

[Setting Up Direct Routing](#) on page 340

Routing channels to individual surround channels

If you want to place an audio source in one separate speaker channel, you can route it directly to that speaker channel. This is useful for premixed material or multi-channel recordings that do not require panning.

- To do this, simply select an individual speaker channel in the Routing rack.
- If a stereo audio channel is routed directly to a speaker channel, the left/right channels are mixed to mono.

The pan control for the audio channel governs the balance between the left and right channel in the resulting mono mix. Center pan will produce a mix of equal proportion.

Routing channels to child busses

If you have added a child bus within a surround bus (see above), it appears as a subentry of the surround bus on the routing selector. Select this option to route a stereo audio channel directly

to that stereo speaker pair of the surround bus (e. g. to route a music track directly to the left and right front speakers in a surround channel).



Input bus configuration

To work with surround sound in Cubase, it is often not necessary to configure a surround format input bus. You can record audio files via standard inputs, and easily route the resulting audio channels to surround outputs at any stage. You can also directly import multi-channel files of a specific surround format onto audio tracks of the same format.

You should add a surround input bus in the following circumstances:

- You have existing audio material in a specific surround format, and you want to transfer this material into Cubase as a single, multi-channel file.
- You want to record a surround setup “live”.
- You have prepared surround premixes (e. g. stems) that you want to record on a new audio track with a surround configuration.

Using VST MultiPanner

Cubase has a special feature for graphically positioning a sound source in the surround field or modifying existing premixes: VST MultiPanner. This plug-in distributes the audio from the input channels in various proportions to the output surround channels.

Whether VST MultiPanner can be used for a specific input/output configuration, depends on whether this configuration can be mapped by the panner. The plug-in supports mapping of mono or stereo inputs to any surround configuration, as well as setups where the input and output channels have the same configuration. In all other cases (e. g. 5.1 to stereo), the MixConvert V6 plug-in is used to map the channel configuration.

While you need to open the plug-in panel to access all of the panner features, you can perform basic panning operations also in the following places:

- In the MixConsole, a miniature view of the surround plug-in appears at the top of the fader section.
You can click and drag directly in the miniature image to move the signal source in the surround field.



- In the Inspector, a miniature surround pan control can be displayed in the Surround Pan section. This panner view offers click and drag panning as well as speaker channel icons reflecting the solo/mute and deactivation states.



NOTE

In all miniature panner views you can scale down your movements by holding the **Shift** key while moving the sound source. This allows you to make fine adjustments.

RELATED LINKS

[Using the MixConvert V6 plug-in on page 577](#)

Plug-in panel

Double-click on any of the miniature panner controls to open the plug-in panel in a separate window.



The VST MultiPanner plug-in offers numerous possibilities to position a mono or stereo sound source. If you work visually oriented, you can simply drag the sound source around in the pan area. To help you execute very exact movements you can use modifier keys to limit the movement direction (e. g. for straight front/rear panning).

To perform rotating movements that you cannot achieve by dragging the mouse, you can use the powerful rotation and orbit controls below the pan area. Here you will also find parameters for controlling the signal distribution to the different speaker channels and the advanced scaling controls with which you can influence the size of the sound source itself.

To the left and right of the surround field there are volume meters, showing the input and output levels of all speaker channels. For a detailed description of all the panning options available in VST MultiPanner, see below.

Positioning signals in the pan area

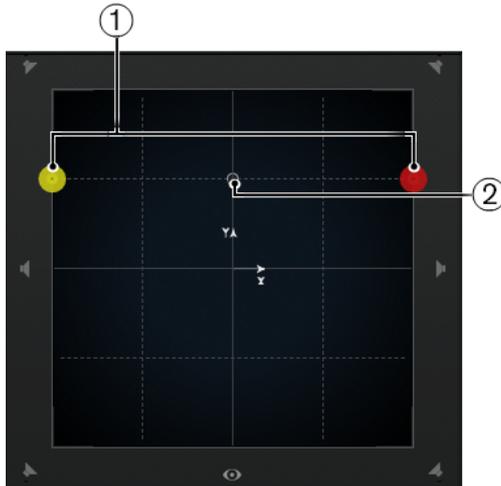
In the pan area, you see a graphical representation of the sound source, with the left and right channels shown in yellow and red.

Here, you can position the sound source using the mouse:

- By clicking at the desired position in the pan area.

When you release the mouse button, the sound source jumps to that position (with the positioning handle, i. e. the circle located in the center of the sound source, ending up where you clicked).

- By clicking and dragging the positioning handle.
Note that you do not have to click exactly on the handle in order to move it. You can click anywhere in the pan area and start moving the mouse, the handle then moves in the same direction as the mouse.



The pan area showing a stereo sound source

1. Left and right channels
2. Positioning handle

The positioning handle can be positioned freely in the pan area and even be moved out of the pan area. The panning balls, though, will never move further out than the edge of the surround field (which is indicated by a gray line). Moving the positioning handle out of the pan area can be useful for extreme panning positions, such as panning all channels hard right.

NOTE

For mono channels there is no positioning handle. Click and drag the input channel to position it.

Speaker channels – Solo and Mute vs. Disabling

The speakers that are distributed around the surround field represent the output configuration. You can disable speakers or solo/mute them.

Muted speaker



This speaker is muted.

Soloed speaker



This speaker is soloed.

Disabled speaker



This speaker is disabled.

- **Alt-click** on a speaker symbol to disable that speaker (the speaker symbol is grayed out) so that no audio will be routed to this surround channel. The signal that would otherwise be sent to this speaker is distributed to the other speakers instead.

Note that the signal is distributed in such a way that the power level stays constant all the time.

- Click on a speaker symbol to solo that speaker (the speaker symbol turns red). That way you will only hear the signal sent to this speaker. All other speakers are muted (yellow speaker symbol). This can be used for testing purposes, e. g. to make sure that a signal is sent to a specific speaker as intended.

Note that you can solo several speakers at the same time by clicking on them one after the other. By **Ctrl/Cmd**-clicking on a speaker symbol, this speaker is soloed exclusively, and all other speakers are muted.

NOTE

Solo and Mute cannot be automated!

RELATED LINKS

[Constant power](#) on page 577

Restricting movement

By default, you can click anywhere in the pan area and drag the mouse to move the sound source. If you want the positioning handle to jump to a specific position, you can click once at that position.

However, you can also limit movement to a specific direction, using the corresponding modifier keys (or the arrow icons above the pan area). That way you can scale down your movements, or have the sound source move along a certain axis (e. g. from bottom left to top right).

- When you press a modifier key (e. g. **Ctrl/Cmd**), the corresponding icon above the pan area is highlighted with a lighter border, indicating that this mode is active. As soon as you release the modifier key, you return to standard mode.
- By clicking on one of the icons above the pan area, the corresponding positioning mode is activated persistently. That way you do not have to keep the corresponding modifier key pressed all the time.

To deactivate the selected positioning mode, switch back to standard mode.

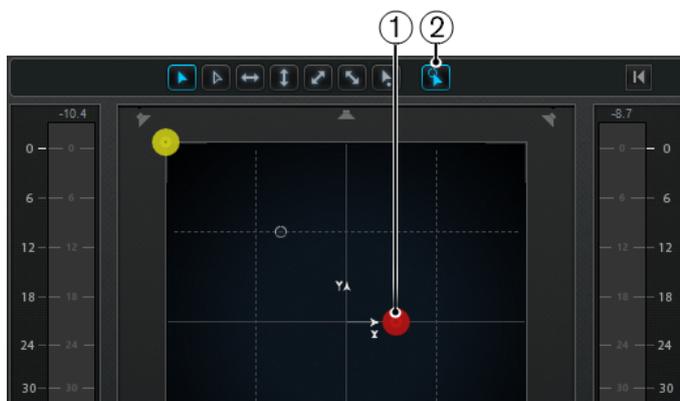
The following modes are available:

Icon	Modifier key(s)	Description
	-	Standard mode, no restrictions apply.
	Shift	Mouse movements are scaled to allow very fine movements. This is useful when panning in the miniature display in the channel, for example.
	Ctrl/Cmd	Horizontal movements only.
	Ctrl/Cmd-Shift	Vertical movements only.
	Alt	Diagonal movements only (bottom left to top right).

Icon	Modifier key(s)	Description
	Alt-Shift	Diagonal movements only (bottom right to top left).
	Shift-Ctrl/Cmd-Alt	In this mode the mouse pointer immediately jumps to the positioning handle even if it is located outside the pan area (only visible in Overview Mode).

Panning the left and right channels independently with the mouse

At the top right of the plug-in window you will find the button for the independent positioning mode. If this mode is activated, you can adjust the left and right input channels (yellow and red balls) independently by clicking and dragging. This is similar to using the 2 surround pan joysticks found on some hardware consoles.



1. The right channel is panned independently with the mouse.
2. The independent positioning mode is activated.

NOTE

To move one of the panning balls in this mode, you do not have to click directly on them. You will always move the panning ball that is nearer to the position of the mouse pointer.

IMPORTANT

- When panning in independent positioning mode, automation data is written for several parameters. Due to this, special automation rules apply.
- Automation data for the independent positioning mode is always written for the complete sound source, not for individual channels. This means it is not possible to record automation for one stereo channel and then add automation for the other stereo channel in a second go, for example.

RELATED LINKS

[Automation](#) on page 576

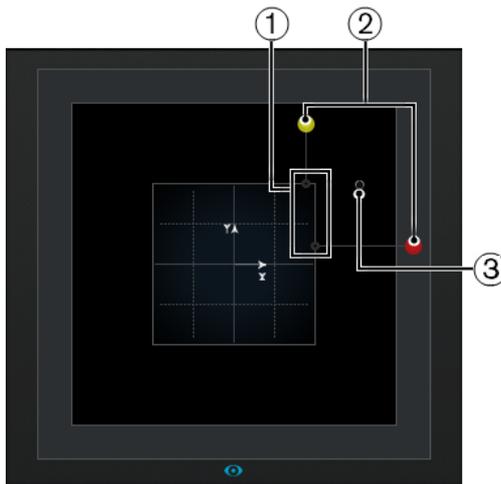
Overview Mode

Overview mode helps you to understand complex panning movements outside the visible pan area.

When moving the sound source, the positioning handle can leave the visible pan area. It can be moved so far outside that all channels end up on the perimeter where the positioning handle left the area. If you now use one of the rotation controls, for example, it can be quite hard to understand why the panning balls are moving the way they do.

To get a better understanding of this behavior, you can switch to overview mode. In this mode, you can see where the positioning handle and the panning balls are mathematically located. A thin line connects these theoretical positions with their acoustically effective positions.

- To switch to overview mode, click on the eye icon  below the pan area.



1. Acoustically effective positions of the left and right channel within the pan area
2. Theoretical positions of the left and right panning ball outside the pan area
3. Positioning handle outside the pan area

NOTE

Overview mode is only used for visualizing the complex scenarios that you can create with VST MultiPanner. The actual panning is done in the standard view.

Left-right and front-rear panning

These controls are used to pan the sound source from left to right and front to rear, and vice versa.



NOTE

This is the same as restricting the movement direction using the **Ctrl/Cmd** and **Ctrl/Cmd-Shift** modifiers.

Rotating signals

The Rotate Signal control is used to rotate the source channels around the positioning handle. All input channels circle around the handle (but they cannot move beyond the borders of the surround field).



Orbit controls

The Orbit controls are used to rotate the sound source (including all input channels and the positioning handle) around the center of the surround field.



1. Orbit Center
2. Radius

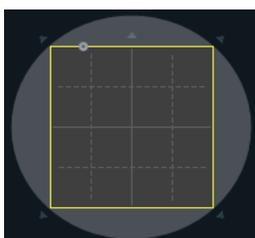
Orbit Center

This is the main control that allows you to perform the rotation.

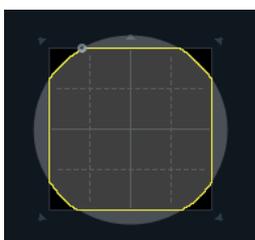
Radius

When using the Orbit Center control, the Radius encoder allows you to control the distance of the sound source from the center of the surround field (without changing the angle).

An example:



a) Radius = 141.4



b) Radius = 116.5

The gray circle shows the theoretical path of the sound source when orbiting the center. Since the sound source cannot leave the pan area, it moves along the perimeter instead. At the maximum radius setting (a) the theoretical path lies outside

the pan area so that the sound source stays on the perimeter all the time; at a smaller setting (b) the circle is smaller and the sound source moves inside the pan area in the corners.

NOTE

The Rotate Signal, Orbit Center, and Radius controls are endless rotary encoders so that there is no limit as to how far left or right you can rotate the sound source.

IMPORTANT

In terms of automation, the Orbit Center, and Radius controls are not independent parameters as such. Instead, a combination of different automation parameters is used.

RELATED LINKS

[Automation](#) on page 576

The LFE encoder

Use the LFE encoder in the plug-in panel to set the signal amount sent to the LFE (Low Frequency Effects) channel.



NOTE

The LFE channel is used as a full range channel, no low-pass filtering is applied.

Center Distribution

The Center Distribution control is used to distribute part or all of the center signal to the left and right front speakers.



For example, this can be useful in the following situation: The center signal is panned directly to the center speaker and the Center Distribution is set to 0%. However, the signal is too discrete for your liking, and you want to add part of the signal to the left and right front speakers to widen it. You can do this by raising the Center Distribution value. At 100%, the center source is provided entirely by the phantom image created by the left and right speakers and using a value in between you can distribute the signal to the 3 speakers.

A blue line at the top of the surround field indicates the distance up to which a phantom signal is added. If you position the source signal inside this range, the signal is sent to all 3 channels.

IMPORTANT

Note that for this to work, the front speaker configuration needs to be symmetrical and there can never be more than 3 speakers involved.

Divergence controls

The 3 divergence controls (Front, F/R, and Rear) determine the attenuation curves used when positioning sound sources for X-axis front, Y-axis (front/rear), and X-axis back. If all 3 controls are set to 0 %, positioning a sound source on a speaker sets all other speakers to zero level. With higher values, the other speakers receive a percentage of the sound source.



Blue horizontal and vertical lines visualize the effects when changing the divergence settings.

For example, by using the front divergence, you can acoustically intensify the distance from the action on screen as perceived by the audience.

- At 0 % the perception is very focused (concentrated in one spot).
- At 100 % the perception is very diffuse (hard to locate).

NOTE

The Center Distribution value and the front divergence are combined. If the front divergence is set to 100 %, the Center Distribution has no effect.

Scaling

The Scale controls allow you to control the horizontal (Width) and vertical (Depth) expansion of the sound source. 100 % corresponds to the complete width or depth of the surround field. If you reduce both values to 0 %, the distance is reduced to zero and all source channels are centered in one spot.



These controls influence the perception of spatiality and ambience, as well as the traceability of signals.

- At 100 % you get a very transparent, clear sound that conveys much spatiality.
- At 0 % the signal is less transparent and movements cannot be traced easily.

NOTE

The Depth parameter is only available for configurations with front and rear channels.

Input and output level meters

The meters to the left and right of the pan area show the volume of all input and output speaker channels, respectively. The numeric values above the meters indicate the peak level that has been measured for any of the channels.

General plug-in controls

The Bypass Effect button

At the top left of the plug-in panel you will find a button to bypass VST MultiPanner. If bypass is activated, the panner attempts to route the input signals to the appropriate output channels (e. g. the left and right front speakers if panning a stereo signal to a 5.1 configuration).

Mute/Solo buttons

At the top of the plug-in panel you will find a Mute and a Solo button that are identical with the channel's Mute/Solo controls.

Read/Write buttons

Like any other effect plug-in, VST MultiPanner has Read and Write buttons at the top of the window to apply and record automation data (see below).

RELATED LINKS

[Bypassing Insert Effects](#) on page 377

[Using Solo and Mute](#) on page 318

Automation

Most of the parameters in the VST MultiPanner plug-in can be automated just like any other channel or insert parameter.

Recording automation for the Orbit controls and the independent positioning mode is handled differently, however. Automation data for these parameters is written as a combination of the front-rear panning, left-right panning and the Rotate Signal parameters. For the independent positioning mode, Scaling is added. Due to this you cannot easily modify existing automation data since this would involve too many different parameters. If an automation pass did not yield the desired result, simply try again.

RELATED LINKS

[Writing Automation Data](#) on page 579

Resetting all parameters

Alt-click the Reset button in the upper right corner of the plug-in panel to reset all controls to their default values.



Constant power

“What goes in, must come out again.” This principle can be taken literally with regard to VST MultiPanner. It means that the power of a source channel is identical to the power of the corresponding output signal.

The advantage of this is that the overall volume as perceived by the listener (= the power) is always the same, regardless of the signal panning, e. g. when you move the sound source in the pan area, disable specific speaker channels, or use the divergence controls.

Using the MixConvert V6 plug-in

MixConvert V6 is a special plug-in that converts one multi-channel audio source into another multi-channel destination. It is most frequently used to “downmix” a multi-channel surround mix into a format with fewer channels, for example, a 5.1 surround mix into a stereo mix.

This plug-in can be used as an insert effect in the MixConsole like other plug-ins but it also has special functions. Cubase automatically inserts MixConvert V6 instead of VST MultiPanner when the channel (audio track, group channel, etc.) is routed to a destination with fewer audio paths. MixConvert V6 is also inserted in place of any cue send panner when the destination has a different audio path than the source.

The MixConvert V6 plug-in is described in detail in the separate PDF document **Plug-in Reference**.

NOTE

There is one exception to this behavior. When a stereo channel is routed to a mono destination through the channel routing or a cue send routing, a normal stereo panner will be inserted. However, this panner will control the balance of the left and right channels as they are blended into the mono destination. The center position blends both channels together by equal amounts. With the pan set all the way to the left, only the left channel can be heard, and vice versa.

Exporting a surround mix

When you have set up a surround mix, you can choose to export it using the Export Audio Mixdown function.

You have the following export options when working with a surround configuration:

- Export to “split” format, resulting in one mono audio file for each surround channel.
- Export to interleaved format, resulting in a single multi-channel audio file (e. g. a 5.1 file, containing all 6 surround channels).
- On Windows, you can also export a 5.1 surround mix to a file in Windows Media Audio Pro format.

This is an encoding format tailored for 5.1 surround.

RELATED LINKS

[Export Audio Mixdown](#) on page 890

[Wave Files](#) on page 896

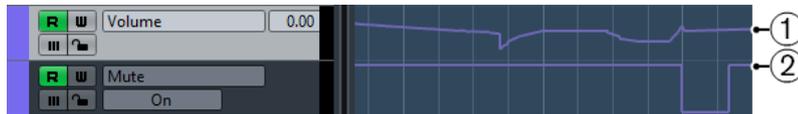
Automation

In essence, automation means recording the values for a particular **MixConsole** or effect parameter. When you create your final mix, Cubase can adjust this particular parameter control.

Automation Curves

Within a Cubase project, the changes in a parameter value over time are reflected as curves on automation tracks.

There are different kinds of automation curves:



- 1. Ramp curves**
Ramp curves are created for any parameter that generates continuous multiple values, such as fader or encoder movements.
- 2. Jump curves**
Jump curves are created for on/off parameters such as mute.

Static Value Line

When you open an automation track for the first time, it does not contain any automation events. This is reflected in the event display as a straight horizontal line, the static value line. This line represents the current parameter setting.

If you manually added any automation events or used write automation for the corresponding parameter and then disable the reading of automation data, the automation curve is grayed-out in the event display and the static value line is used instead.

As soon as **Read** is enabled, the automation curve is used.

Write/Read Automation

You can automation enable tracks and **MixConsole** channels by activating their automation write **W** and read **R** buttons.

- If you activate **W** for a channel, virtually all **MixConsole** parameters that you adjust during playback for that specific channel are recorded as automation events.
- If **R** is activated for a channel, all your recorded **MixConsole** actions for that channel are performed during playback.

The **R** and **W** buttons for a track in the track list are the same as the **R** and **W** buttons in the **MixConsole**.

NOTE

R is automatically enabled when you enable **W**. This allows Cubase to read existing automation data at any time. You can separately deactivate **W** if you only want to read existing data.

There are also global read and write indicator buttons **Activate/Deactivate Read/Write for All Tracks** on the **MixConsole** toolbar and at the top of the track list. These buttons light up as soon as there is an enabled **R** or **W** button on any channel/track within your project. Furthermore, they can be clicked to activate or deactivate **R/W** of all tracks simultaneously.

NOTE

R/W are also available on the **Automation Panel** (Cubase Pro only).

RELATED LINKS

[Read/Write Buttons](#) on page 586

Writing Automation Data

You can create automation curves manually or automatically.

- Manual writing makes it easy to quickly change parameter values at specific points without having to activate playback.
- Automatic writing lets you work almost as if you were using a real mixer.

With both methods, any applied automation data is reflected in both the **MixConsole** (a fader will move for example) and in the corresponding automation track curve.

RELATED LINKS

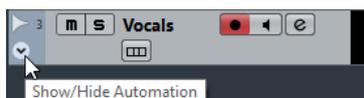
[Manual Writing of Automation Data](#) on page 580

Automatic Writing of Automation Data

Every action that you perform is automatically recorded on automation tracks which you can later open for viewing and editing.

PROCEDURE

1. In the track list, click **Show/Hide Automation** for a track to open its automation track.



2. Click **W** to enable the writing of automation data on this track.
3. Start playback.
4. Adjust the parameters in the **MixConsole**, in the **Channel Settings** window, or in the effect control panel.

The value settings are recorded and displayed as a curve on the automation tracks. When automation data is being written, the color of the automation track changes to and the delta indicator in the automation track shows the relative amount by which the new parameter setting deviates from any previously automated value.

5. Stop playback and return to the position where you started playback.
6. Click **W** to disable the writing of automation data.
7. Start playback.

RESULT

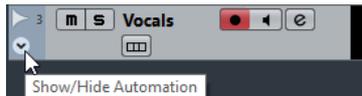
All actions that you recorded are reproduced exactly. When you drag a plug-in to a different insert slot on the same channel, any existing automation data moves with the plug-in. When you drag it to an insert slot on a different channel, any existing automation data is not transferred to the new channel.

Manual Writing of Automation Data

You can add automation events manually by drawing automation curves on an automation track.

PROCEDURE

1. In the track list, click **Show/Hide Automation** for a track to open its automation track.



2. Click the automation parameter name and select the parameter from the pop-up menu.
3. Select the **Draw** tool.
4. Click on the static value line.
An automation event is added, read automation mode is automatically activated, and the static value line changes to a colored automation curve.
5. Click and hold to draw a curve by adding many automation events.
When you release the mouse button, the number of automation events is reduced.

NOTE

To adjust the thinning out of events, open the **Automation Panel**, click **Automation Settings** and enter a value for **Reduction Level**.

6. Start playback.
-

RESULT

The automated parameter changes with the automation curve, and the corresponding fader in the **MixConsole** moves accordingly.

AFTER COMPLETING THIS TASK

Repeat the procedure if you are not happy with the result. If you draw over existing events, a new curve is created.

Tools for Drawing Automation Data

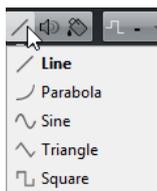
Apart from the **Draw** tool, you can use the following tools to draw automation events. If you click with any of these tools on the automation track, **R** is activated automatically.

- **Object Selection**
If you click on an automation track with the **Object Selection** tool, an automation event is added. If you hold down **Alt**, you can draw several automation events.

NOTE

Events that are introduced between existing events that do not deviate from the existing curve are removed as soon as you release the mouse button.

To activate the **Line** tool in any other available mode, click the **Line** tool and click again to open a pop-up menu where you can select the **Line** tool mode.



The following **Line** tool modes are available:

Line mode

If you click on the automation track and drag with the **Line** tool in **Line** mode, you can create automation events in a line. This is a quick way to create linear fades, etc.

Parabola mode

If you click and drag on the automation track with the **Line** tool in **Parabola** mode, you can create more natural curves and fades.

NOTE

The result depends on the direction from which you draw the parabolic curve.

Sine, Triangle, or Square mode

If you click and drag on the automation track with the **Line** tool in **Sine**, **Triangle**, or **Square** mode and snap to grid is activated, the period of the curve (the length of one curve cycle) is determined by the grid setting. If you press **Shift** and drag, you can set the period length manually, in multiples of the grid value.

NOTE

The **Line** tool can only be used for ramp type automation curves.

Editing Automation Events

Automation events can be edited much like other events.

NOTE

If you move an event or part on a track and you want the automation events to follow automatically, select **Edit > Automation Follows Events**. Any automation events at the new position are overwritten.

- You can use the tools on the **Project** window toolbar to edit automation events.
- You can use the automation event editor to edit selected automation events on ramp automation curves.

RELATED LINKS

[Toolbar](#) on page 44

[Automation Event Editor](#) on page 582

Selecting Automation Events

- To select an automation event, click it with the **Object Selection** tool.
- To select multiple events, drag a selection rectangle with the **Object Selection** tool or **Shift**-click the events.
- To select all automation events on an automation track, right-click the automation track and select **Select All Events** from the context menu.

Selected events are indicated by a dark color.

NOTE

If you select several events of a ramp automation curve, the automation event editor becomes available.

RELATED LINKS

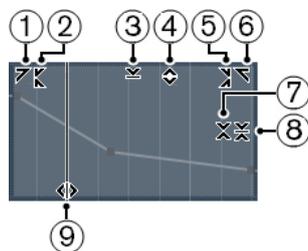
[Automation Event Editor](#) on page 582

Automation Event Editor

The automation event editor allows you to edit selected events on the automation track. The automation event editor is only available for automation ramp curves.

- To open the automation event editor, activate the **Object Selection** tool and drag a selection rectangle on a ramp type automation track.

The automation event editor features the following smart controls for specific editing modes:



1. Tilt Left

If you click in the upper left corner of the editor, you can tilt the left part of the curve. This allows you to tilt the event values at the start of the curve upwards or downwards.

2. Compress Left

If you **Alt**-click in the upper left corner of the editor, you can compress the left part of the curve. This allows you to compress or expand the event values at the start of the curve.

3. Scale Vertically

If you click in the middle of the upper border of the editor, you can scale the curve vertically. This allows you to raise or lower the event values of the curve in percent.

4. Move Vertically

If you click on the upper border of the editor, you can move the entire curve vertically. This allows you to raise or lower the values of the event values of the curve.

5. Compress Right

If you **Alt**-click in the upper right corner of the editor, you can compress or expand the right part of the curve. This allows you to compress or expand the event values at the end of the curve.

6. Tilt Right

If you click in the upper right corner of the editor, you can tilt the right part of the curve. This allows you to tilt the event values at the end of the curve upwards or downwards.

7. Scale Around Relative Center

If you **Alt**-click in the middle right corner of the editor, you can scale the curve relative to its center. This allows you to raise or lower the event values horizontally around the center of the editor.

8. Scale Around Absolute Center

If you click in the middle right corner of the editor, you can scale the curve absolute to its center. This allows you to raise or lower the event values horizontally around the center of the editor.

9. Stretch

If you click on the lower border of the editor, you can stretch the curve horizontally. This allows you to move the event values of the curve to the left or to the right.

NOTE

To edit the automation curves on several tracks at the same time, drag a selection rectangle across the corresponding automation tracks, and hold down **Ctrl/Cmd** while using the smart controls.

Moving Automation Events

Moving Single Automation Events

- To move a selected automation event, click it and drag to the left or to the right.
- To restrict the direction to horizontal or vertical movement, press **Ctrl/Cmd** and drag.

NOTE

Snap is taken into account when you move automation curves horizontally. To turn it off temporarily, hold down **Ctrl/Cmd** and any other modifier, and drag.

Moving Multiple Automation Events

- To move a selection of automation events, click inside the selection rectangle and drag to the left or to the right.
If you made a continuous selection of automation events, events at the destination range are overwritten. However, if you move the same selection range past already existing events, they appear again. If a selection range contains automation events that are deselected, dragging is restricted. You cannot move this selection past existing events.
- To copy a continuous selection of automation events, click inside the selection rectangle, hold down **Alt**, and drag to the left or to the right.

NOTE

If you press **Esc** while dragging the selection rectangle, the selection jumps back to its original position.

RELATED LINKS

[Selecting Automation Events](#) on page 581

Removing Automation Events

- To remove an automation event, click on it with the **Erase** tool.
- To remove multiple automation events, select them and press **Backspace** or **Delete** or select **Edit > Delete**.
- When **Use Virgin Territory** is enabled, this creates a gap. When disabled, the events within the range are removed.
- To remove all automation events from the automation track and close the automation track, click the automation parameter name in the track list and select **Remove Parameter** from the pop-up menu.

NOTE

When removing automation events, the curve is redrawn to connect the remaining events.

RELATED LINKS

[Virgin Territory vs. Initial Value \(Cubase Pro only\)](#) on page 585

Automation Tracks

Most of the tracks in your project have automation tracks, one for each automated parameter.

To show automation tracks, you must open them.

Showing/Hiding Automation Tracks

- Position the mouse pointer over the lower left corner of the track and click the arrow icon (**Show/Hide Automation**) that appears.
- Right-click the track in the track list and select **Show/Hide Automation** from the context menu.
- To open another automation track, position the mouse pointer over the lower left corner of an automation track, and click + (**Append Automation Track**).
- To show all used automation tracks in the track list, right-click any track and select **Show All Used Automation** from the context menu.
- Cubase Pro only: To open the corresponding automation track on writing automation parameters, **Project > Automation Panel > Automation Settings > Reveal Parameter on Write**.
- Cubase Artist only: To open the corresponding automation track on writing automation parameters, select **File > Preferences > Editing** and activate **Show Automation Track in Project on Writing Parameter**.

Removing Automation Tracks

- To remove an automation track together with all automation events, click the parameter name and from the pop-up menu, select **Remove Parameter**.
- To remove all automation tracks from a track that do not contain automation events, select **Remove Unused Parameters** from any of its automation parameter name pop-up menus.
- To remove automation tracks, you can also select **Project > Automation Panel > Functions** and select one of the options to delete automation (Cubase Pro only).

Assigning a Parameter to an Automation Track

Parameters are already assigned to automation tracks when you open them, according to their order in the parameter list.

PROCEDURE

1. Open an automation track and click on the automation parameter name.
A parameter list is shown. The contents depend on the track type.
2. From the pop-up menu, select the parameter or select **More** to open the **Add Parameter** dialog that lists all parameters that can be automated, and select the parameter there.
3. Select the parameter.
The parameter replaces the current parameter in the automation track.

NOTE

The replacing of the automation parameter is non-destructive. If the automation track contains any automation data for the parameter that you just replaced, this data is there, although it is not visible. By clicking on the automation parameter name in the track list, you can switch back to the replaced parameter. On the pop-up menu, all automated parameters are indicated by an asterisk (*) after the parameter name.

Muting Automation Tracks

By muting an automation track you turn off automation for a single parameter.

- To mute individual automation tracks, click **Mute** in the track list.

Virgin Territory vs. Initial Value (Cubase Pro only)

For parameter automation, Cubase works either with an initial value or with virgin territory.

When no automation data exists for a particular parameter, the starting point of an automation pass is saved as the initial value. When you punch out of the automation pass, it is this initial value to which the parameter will return. This has one important consequence: As soon as the initial value is set, the corresponding parameter is fully automated for the complete track, at any given timecode position of the project – even if your automation pass lasted only 2 seconds. When you release a control, it returns to the value that is defined by the automation curve – even when in stop mode.

When you enable **Use Virgin Territory**, no automation curve is displayed on the automation track, and you find automation data only where you actually perform an automation pass. After an automation pass you will find virgin territory only to the right of the last automation event.

Creating Gaps

Gaps are empty sections between automation curves. You can create gaps inside a section with automated values.

PROCEDURE

1. Select **Project > Automation Panel**.
 2. Click **Automation Settings**, and activate **Use Virgin Territory**.
 3. With the **Range Selection** tool, select a range on an automation track with existing automation data, and press **Delete** or **Backspace**.
-

RESULT

A gap is created, and new events at the beginning and the end of the selection range are created. These mark the end point of the automation curve to the left and the start of the next automation curve to the right of the gap.

Defining a Terminator Point

You can define any automation event on the automation curve as the terminator point of this part of the curve. This will automatically delete the line between this event and the next one, creating a gap.

PROCEDURE

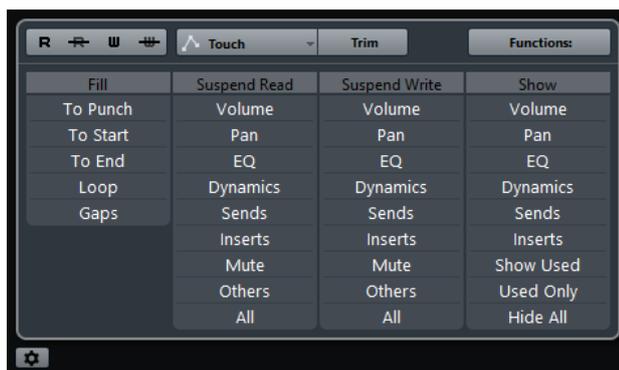
1. In the automation curve, click the event that you want to define as the last point to select it.
2. In the **Project** window info line, set **Terminator** to **Yes**.
The line between this event and the next one is deleted and a gap is created.

NOTE

If you define the last automation event of an automation curve as terminator point, any automation data to the right of this event (as defined by an initial value) is deleted.

Automation Panel (Cubase Pro only)

The **Automation** panel is a floating window, similar to the **MixConsole** and **Transport** panel, and can be left open while you work.



To show the **Automation** panel, do one of the following:

- Select **Project > Automation Panel**.
- On the **Project** window toolbar, click **Open Automation Panel**.
- Press **F6**.

Read/Write Buttons

In the upper part of the **Automation Panel**, you will find the **Read** and **Write** buttons. These are used to globally enable or disable **Read** and **Write** on all tracks.



- To enable all **Read** buttons on all tracks/channels of your project, click **Activate Read for all tracks**.
- To disable all **Read** buttons, click **Deactivate Read for all tracks**.
- To enable all **Write** buttons and, at the same time, all **Read** buttons on all tracks/channels of your project, click **Activate Write for all tracks**.
- To disable all **Write** buttons, click **Deactivate Write for all tracks**. The **Read** buttons will remain enabled.

Automation Modes

Cubase provides different punch out modes for automation: **Touch**, **Auto-Latch**, and **Cross-Over**. In all modes, automation data will be written as soon as a parameter control is touched in play mode. They differ in their punch out behavior.

The automation modes are available on the upper part of the **Automation Panel** and on the **Project** window toolbar on the **Global Automation Mode** pop-up menu.



You can change the automation mode at any time, for example, in play or stop mode or during an automation pass. You can also assign key commands to the automation modes.

The current automation pass will always punch out as soon as one of the following conditions is met, independent of which automation mode is selected:

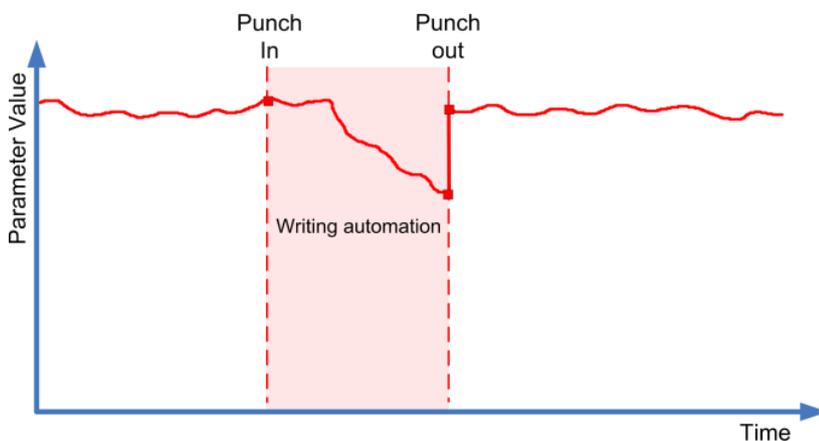
- If you disable **Write**.
- If you stop playback.
- If you activate **Fast Forward/Rewind**.
- If the project cursor reaches the right locator in **Cycle** mode.
- If you click in the ruler to move the project cursor. This is user-definable and can be controlled via the **Automation Panel**.

RELATED LINKS

[Automation Settings](#) on page 594

Touch

Touch mode is useful in situations where you want to make a change lasting only a few seconds to an already set up parameter.



- **Touch** writes automation data only for as long as you actually touch a parameter control. Punch out occurs as soon as you release the control.
- After punch out, the control returns to the previously set value.

NOTE

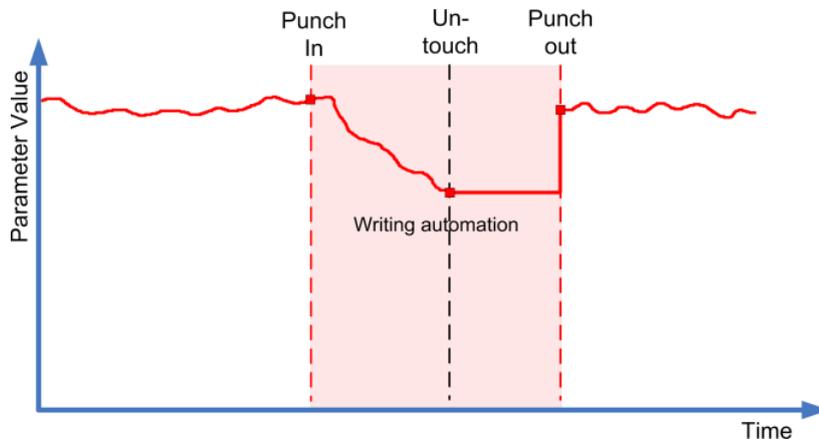
You can set the time it takes for the parameter to reach the previously set value with the **Return Time** setting in the **Automation Settings**.

RELATED LINKS

[Automation Settings](#) on page 594

Auto-Latch

Auto-Latch is useful in situations where you want to keep a value over a longer period of time – for example when making EQ settings for a particular scene. In **Auto-Latch** mode, there is no specific punch out condition other than those that are valid in all modes.



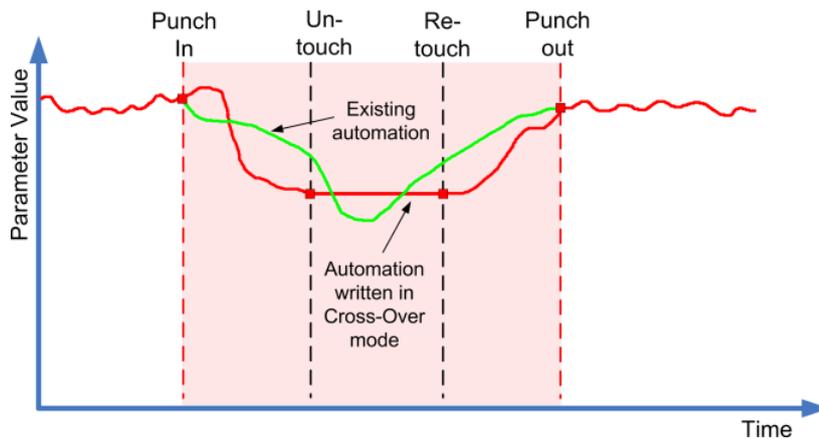
- Once your pass has started, the writing of automation data continues for as long as playback lasts or **Write** is enabled.
- When you release the control, the last value is kept until you punch out.

NOTE

The automation mode for On/Off switches is always **Auto-Latch** even if another mode is selected globally or for the track.

Cross-Over

Cross-Over mode allows you to perform a manual return to ensure smooth transitions between new and existing automation settings. For **Cross-Over**, the punch out condition is crossing over an already existing automation curve after touching the parameter for a second time. The **Cross-Over** mode can be used in situations where you are not satisfied with an automation curve or with the automatically applied return settings.



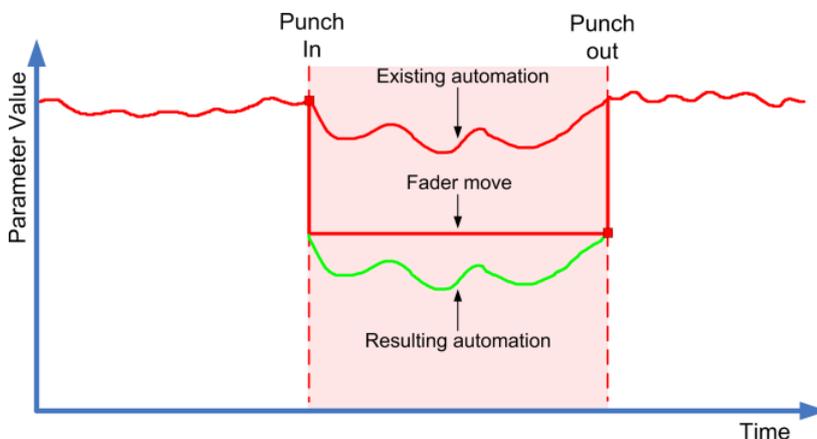
- Once your pass has started, the writing of automation data continues for as long as playback lasts or **Write** is enabled.
- When you release the control the automation pass continues, with the value setting remaining the same.
- When you re-touch the fader and move it towards the original value, punch out occurs automatically as soon as you cross the original curve.

RELATED LINKS

[Automation Settings](#) on page 594

Trim

Trim allows you to modify the automation curve from a previous pass. If you activate **Trim**, a trim curve is positioned in the middle of the automation track.



NOTE

Trim works for channel volume and cue send level adjustments.

If you activate **Trim**, all editing and recording affects the trim curve. If you deactivate **Trim**, it affects the original automation curve instead.

You can edit trim data like any other automation data. It is stored with the project.

- Drag the trim curve up or down and add automation events to it. These increase or decrease the values of the original automation curve, but allow you to preserve the original data.

You can use **Trim** either in stop or in play mode:

- In stop mode, you can select one of the **Fill** options and edit the trim curve manually by clicking on it and moving it up or down. The original automation curve is displayed in a lighter color and its values are merged with the trim curve. The resulting automation curve is displayed in a darker color.
- In play mode, the events of the original automation curve are trimmed as the project cursor passes over them.

Freeze Trim

You can freeze your trim curve automatically or manually. This renders all trim data into a single automation curve.

- To freeze your trim curve automatically whenever a write operation is finished, open the **Automation Settings** and select **On Pass End** in the **Freeze Trim** pop-up menu.
- To freeze your trim curve automatically when Trim mode is switched off, open the **Automation Settings** and select **On Leaving Trim Mode** in the **Freeze Trim** pop-up menu.
- To freeze your trim curve manually, open the **Automation Settings** and select **Manually** in the **Freeze Trim** pop-up menu. To freeze a specific parameter for the track click the parameter name and from the pop-up menu select **Freeze Trim**.

- To freeze the trim automation for all tracks in the project, open the **Automation Panel**, and in the **Functions** pop-up menu select **Freeze All Trim Automation in Project**. To freeze the trim automation of all selected tracks, open the **Automation Panel**, and in the **Functions** pop-up menu select **Freeze Trim Automation of Selected Tracks**.

Functions

At the top right of the **Automation Panel**, you will find the **Functions** pop-up menu, which contains a number of global automation commands.

Delete All Automation in Project

Removes all automation data from your project.

Delete Automation of Selected Tracks

Removes all automation data for the selected tracks.

Delete Automation in Range

Deletes all automation data between the left and right locators on all tracks.

Fill Gaps on Selected Tracks

This option is used with virgin territories. Select this to fill any gaps in the automation curves of the selected tracks with a continuous value. The value of the last event (the end point) of a section is used to fill the gap. This value is written across the gap up to one millisecond before the first event of the next automated section. A new event is inserted here; the value will be ramped to the next automated section.

Fill Gaps with Current Value (Selected Tracks)

This option is used with virgin territories. Select this option to fill any gaps in the automation curves of the selected tracks. The gaps are filled with the current value of the corresponding control.

Freeze All Trim Automation in Project

Freezes all trim automation for all tracks in the project.

Freeze Trim Automation of Selected Tracks

Freezes all trim automation for the selected tracks.

Fill Options

The **Fill** options define what happens in a specific section of your project when you punch out of a running automation pass.

The **Fill** options write one particular value across a defined section of your automation track. Any previously created data within this section is overwritten.

You can also combine the various **Fill** options.

Activating To Punch

PROCEDURE

1. On the **Automation Panel**, activate **Touch**, and activate **To Punch** as **Fill** option.
2. Start playback.
3. Move the fader until you have found the volume setting that you need and release the fader to punch out.

The volume curve is set from the point of punch out back to where you punched in. The values written while moving the fader to find the right value are deleted, and the volume jumps at exactly the right moment from the value set in the first scene to the value found for the second scene.

Activating To Start

PROCEDURE

1. On the **Automation Panel**, activate **Touch**, and activate **To Start** as **Fill** option.
 2. Start playback.
 3. Move the fader until you have found the volume setting that you need and release the fader to punch out.
The automation track is filled from where you punched out to the start of the project.
-

Activating To End

PROCEDURE

1. On the **Automation Panel**, activate **Touch**, and activate **To End** as **Fill** option.
 2. Start playback and touch the parameter control to punch in the automation pass.
 3. Move the fader until you have found the setting that you want and release it.
This will punch out the writing of automation data. As you let go of the fader, the automation curve takes the found value setting, from where you punched out to the end of the project.
-

Activating Loop

PREREQUISITE

You have set up a loop range with the left and right locators.

PROCEDURE

1. On the **Automation Panel**, activate **Touch**, and activate **Loop** to activate it as **Fill** option.
 2. Start playback.
 3. Move the fader until you have found the volume setting that you need and release the fader to punch out.
The found value is set within the range that is defined by the left and right locators.
-

Activating Gaps

PREREQUISITE

You have set up virgin territories.

NOTE

When **Trim** is active, **Gap** has no effect. This is because **Trim** only modifies already existing data.

PROCEDURE

1. On the **Automation Panel**, activate **Touch**, and activate **Gaps** to activate it as **Fill** option.
2. Start playback.

3. Move the fader until you have found the volume setting that you need and release the fader to punch out.
Any gaps between previously written automation events is filled with the last value that was found during the last automation pass.
-

RELATED LINKS

[Virgin Territory vs. Initial Value \(Cubase Pro only\)](#) on page 585

One Shot vs Continuous Fill

You can use the **Fill** options in different ways:

- **One shot**
When you click one of the **Fill** buttons, it is highlighted, and will be enabled during the next automation pass. Afterwards, the option is disabled again.
- **Continuous fill**
If you click a **Fill** button a second time, a lock symbol is displayed on the highlighted button, indicating that you are in continuous fill mode and that the operation can be repeated as many times as you want. Click the button a third time to disable the corresponding **Fill** option.

Drawing Fill Manually

You can use the **Fill** options on the **Automation Panel** in combination with the **Draw** tool. This provides you with a powerful method for writing automation data manually.

PROCEDURE

1. Open an automation track and select the **Draw** tool.
2. On the **Automation Panel** select **To End** as a **Fill** option.
3. Click and draw to create an automation curve.
4. Release the mouse button.
At the moment of release, a final automation event is created. The automation curve is written from this last event through to the end of the project.

NOTE

This procedure can be used with all the **Fill** options.

Suspend Options

This section on the **Automation Panel** allows you to exclude specific parameters from the reading or writing of automation data. This way, you have full manual control of these parameters.

Suspend Read

If you suspend the reading for a specific parameter during automation gives you full manual control of it.

- To suspend the reading of automation data for a specific parameter, click the corresponding parameter.
- To suspend the reading of automation data for all parameters/parameter groups, click **All**.

NOTE

When any of the options in the **Suspend Read** category are enabled, clicking **All** will disable these buttons.

EXAMPLE

Imagine that you have already automated several tracks. While working on the current track, you want one of the other tracks to be louder, to better identify a particular position in your audio material.

By suspending **Read** for the volume parameter, you regain full manual control and can set the volume to the required level.

Suspend Write

If you suspend the writing for a specific parameter during automation punches this parameter out of the automation pass.

- To suspend the writing of automation data for a specific parameter, click the corresponding parameter.
- To suspend the writing of automation data for all parameters/parameter groups, click **All**.

NOTE

When any of the options in the **Suspend Write** category are enabled, clicking **All** will disable these buttons.

EXAMPLE

Imagine the following situation: To help you concentrate while working on a particular track, you mute several other tracks. However, because write automations are active on these tracks, this mute state is also automated during the next automation pass – a classic situation in mixing.

To avoid inadvertently excluding whole tracks from your mix in this way, you can exclude **Mute** from all automation writing. Simply click **Mute** in the **Suspend Write** category on the **Automation Panel**.

Show Options

The **Show** options allow you to open all automation tracks for a specific parameter. This gives you an overview of the automated parameter.

- To open the volume, pan, EQ, sends, or inserts automation tracks for all tracks, click the corresponding parameter.
The automation tracks are opened even if no automation data was recorded on these tracks.
- To step through the individual parameter sets of parameter groups, for example Pan, EQ, Sends, and Inserts, click the respective button repeatedly.
- To show only the automation tracks for which automation data has already been written, activate **Used Only** and click one of the options.
- To show all automation tracks that contain automation data, activate **Show Used**.
- To hide all open automation tracks, activate **Hide All**.

NOTE

The **Show** options on the **Automation Panel** affect all tracks.

Automation Settings

To set up specific automation settings, click the button in the bottom left of the automation panel.

Show Data on Tracks

Activate this to show audio waveforms or MIDI events on automation tracks.

The events are displayed only if **Show waveforms (File > Preferences > Event Display > Audio)** is enabled and if **Part Data Mode (File > Preferences > Event Display > MIDI)** is set to an option other than **No data**.

Use Virgin Territory

Activate this if you want to use virgin territories.

Continue Writing

If you activate this option, the recording of automation will not be blocked when locating to a new position. This can be used to perform multiple automation passes in cycle mode or if you are using the arranger functions.

If this option is deactivated and you write automation data and locate to another position in the project, the writing will be stopped until the mouse button is released or until a stop command is received.

Reveal Parameter on Write

If you activate this option, the corresponding automation track is revealed on writing automation parameters. This is useful if you want to have a visual control of all parameters changed on writing.

Return Time

This determines how fast the automated parameter returns to any previously automated value when you release the mouse button. Set this to a value higher than 0 to prevent sudden jumps in your parameter settings which may lead to crackles.

Reduction Level

Punching out or using the **Reduce Automation Events** function removes all superfluous automation events. This results in an automation curve that contains only the events necessary to reproduce your actions. A reduction level value of 0 % removes repeated automation points only. A reduction level value between 1 to 100 % smoothens the automation curve. The default value of 50 % should reduce the automation data amount significantly without touching the sound result of the existing automation.

Spike Detection Range

Defines a period of time in which sudden changes in the automated parameter are considered to be unwanted spikes. The spikes can be removed using the **Delete Automation Spikes** function. You can set values from 0 to 200 ms.

Freeze Trim

In this pop-up menu, you can specify how to freeze your trim curve.

- To freeze your trim curve manually, select **Manually**.

- To perform a freeze whenever a write operation is finished, select **On Pass End**.
- If you want the trim data to freeze automatically when the trim mode is switched off (globally or individually for a track), select **On Leaving Trim Mode**.

RELATED LINKS

[Virgin Territory vs. Initial Value \(Cubase Pro only\)](#) on page 585

MIDI Controller Automation

When working with Cubase, it is possible to record automation data for MIDI controllers as MIDI part data and as data on an automation track.

If you have such conflicting automation data, you can specify separately for every parameter how these will be combined during playback. This is done by selecting an automation **Merge Mode** in the track list for the automation track.

Automation Merge Modes

This pop-up menu is only available for controllers that can be recorded both for a part and a track. The settings that you make for a controller are applied to all MIDI tracks that use this controller.

Use Global Settings

When this is selected, the automation track uses the global automation **Merge Mode** that is specified in the **MIDI Controller Automation Setup** dialog.

Replace 1 - Part Range

When this option is selected, the part data has playback priority over the automation track data, for example at the left and right part borders, the automation mode switches abruptly from part to track automation, and vice versa.

Replace 2 - Last Value Continues

Similar to the above, but part automation only begins when the first controller event within the part is reached. At the end of the part, the last controller value is kept until an automation event is reached on the automation track.

Average

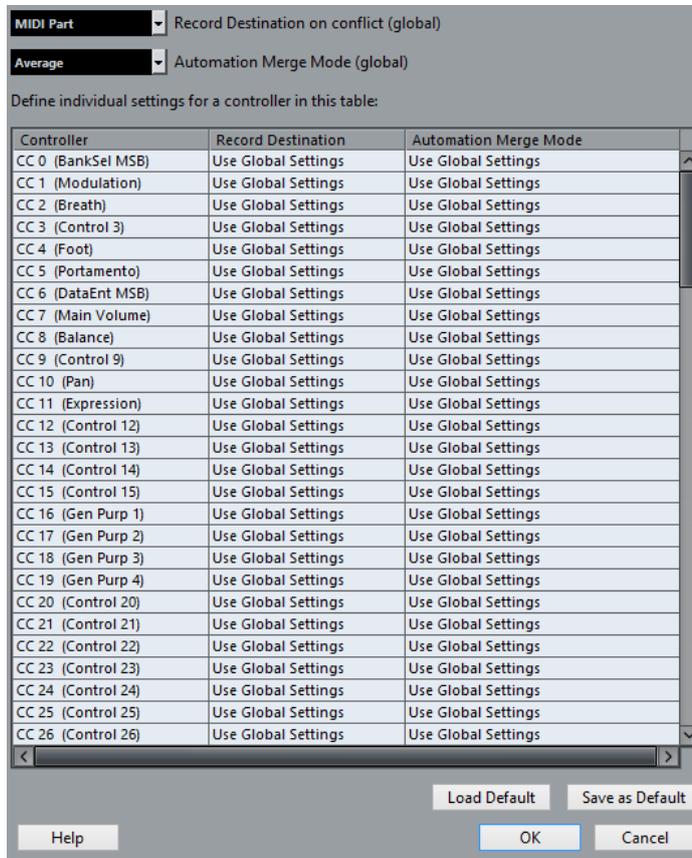
When this option is selected, the average values between part and track automation is used.

Modulation

In this mode, the automation track curve modulates the existing part automation, with higher curve points emphasizing the automation values and lower curve points reducing the automation values even further.

MIDI Controller Automation Setup

In the **MIDI Controller Automation Setup** dialog, you can specify how existing MIDI automation is handled on playback and new automation data is recorded in a MIDI part or as track automation. All settings that you make in this dialog are saved with the project.



Record Destination on conflict (global)

Allows you to determine which destination is used if MIDI controller data is received by Cubase and both the **Record** and the **Write Automation** buttons are enabled. Select **MIDI Part** to record MIDI part automation. Select **Automation Track** to record the controller data on an automation track in the **Project** window.

Automation Merge Mode (global)

Allows you to specify the global merge mode for automation.

Controller list

Lists all MIDI controllers for which you can specify the record destination and the merge mode for automation separately. This gives you full control over the MIDI automation (destination as well as merge mode) in your project.

Record Destination

Click in the **Record Destination** column for a MIDI controller to open the pop-up menu where you can choose where you want recorded data of this particular MIDI controller to end up.

Automation Merge Mode

Click in the **Automation Merge Mode** column for a MIDI controller to specify what happens with data for this specific controller on playback.

Save As Default

Allows you to save the current settings as default settings. When you create a new project, the default settings is used.

Load Default

Allows you to load the default settings.

VST Instruments

VST instruments are software synthesizers or other sound sources that are contained within Cubase. They are played internally via MIDI. You can add effects or EQ to VST instruments.

Cubase allows you to make use of VST instruments in the following ways:

- By adding a VST Instrument and assigning one or several MIDI tracks to it.
- By creating an instrument track.
This is a combination of a VST instrument, an instrument channel, and a MIDI track. You play and record MIDI note data directly for this track.

NOTE

Some VST instruments are included with Cubase. These are described in the separate PDF document **Plug-in Reference**.

RELATED LINKS

[Instrument Tracks](#) on page 107

Adding VST Instruments

PROCEDURE

1. On the **Devices** menu, select **VST Instruments**.
2. Right-click on an empty area of the **VST Instruments** window.
3. From the context menu, select one of the following:
 - **Add Track Instrument**
 - **Add Rack Instrument**
4. From the instrument selector, select an instrument.
 - Click **Add Track** if you chose to add a track instrument.
 - Click **Create** if you chose to add a rack instrument.

RESULT

If you chose **Add Track Instrument**, the instrument control panel opens, and an instrument track with the name of the instrument is added to your project.

If you chose **Add Rack Instrument**, the instrument control panel opens, and the following tracks are added to the track list:

- A MIDI track with the name of the instrument. The output of the MIDI track is routed to the instrument.

NOTE

In the **Preferences** dialog (**VST-Plug-ins** page), you can specify what happens when you load a VST instrument.

- A folder with the name of the instrument that is added within a **VST Instruments** folder. The instrument folder contains two automation tracks: one for the plug-in parameters and one for the synth channel in the **MixConsole**.

Creating Instrument Tracks

You can create instrument tracks that hold dedicated VST instruments.

PROCEDURE

1. Select **Project > Add Track > Instrument**.
2. Open the **Instrument** pop-up menu and select a VST instrument for the instrument track.
3. Click **Add Track**.

RESULT

The selected VST instrument is loaded for the instrument track. In the **MixConsole** an instrument channel is added.

VST Instruments in the Right Zone

The **VST Instruments** in the right zone of the **Project** window allow you to add VST instruments for MIDI and instrument tracks.

All instruments that are used in your project are shown. You can access to up to 8 quick controls for each added instrument.

To open the **VST Instruments** in the right zone, click **Show/Hide Right Zone**  on the **Project** window toolbar, and at the top of the right zone, click the **VST Instruments** tab.



NOTE

The **VST Instruments** in the right zone are just another representation of the **VST Instruments** window. All features are the same.

RELATED LINKS

[Showing/Hiding Zones](#) on page 43

VST Instruments Window

The **VST Instruments** window allows you to add VST instruments for MIDI and instrument tracks.

All instruments that are used in your project are shown. You can access to up to 8 quick controls for each added instrument.

To open the **VST Instruments** window, select **Devices > VST Instruments**.



RELATED LINKS

[Instrument Tracks](#) on page 107

VST Instruments Toolbar

The VST instruments toolbar contains controls that allow you to add and set up VST instruments and VST quick controls.

The following controls are available:



1. **Add Track Instrument**

Opens the **Add Instrument Track** dialog that allows you to select an instrument and add an instrument track that is associated to this instrument.

2. **Find Instruments**

Opens a selector that allows you to find a loaded instrument.

3. **Set Remote-Control Focus for VST Quick Controls to Previous/Next Instrument**

Allows you to set the remote-control focus to the next/previous instrument.

4. **Show/Hide all VST Quick Controls**

Shows/Hides the default quick controls for all loaded instruments.

5. **Settings**

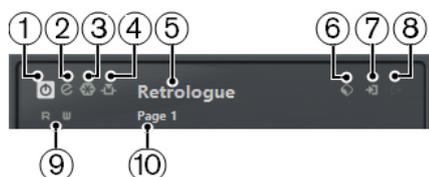
Opens the **Settings** menu where you can activate/deactivate the following modes:

- **Show VST Quick Controls for One Slot Only** shows the VST Quick Controls exclusively for the selected instrument.
- **MIDI Channel follows track selection** ensures that the **Channel** selector follows the MIDI track selection in the **Project** window. Use this mode if you work with multitimbral instruments.
- **Remote-Control Focus for VST Quick Controls follows track selection** ensures that the VST Quick Control remote-control focus follows the track selection.

VST Instrument Controls

The VST instrument controls allow you to make settings for a loaded VST instrument.

The following controls are available on each instrument:



- 1. Activate Instrument**
Activates/Deactivates the instrument.
- 2. Edit Instrument**
Opens the instrument panel.
- 3. Freeze Instrument**
Freezes the instrument. This allows you to save CPU power.
- 4. Activate Side-Chain**
Activates/Deactivates side-chain input for the instrument.

NOTE

This option is only available for VST 3 instruments that support side-chaining.

- 5. Instrument Selector**
Allows you to select another instrument. Double-click to rename the instrument. The name is shown in the **VST Instruments** window in the **Output Routing** pop-up menu for MIDI tracks. This is useful when you work with several instances of the same instrument.
- 6. Preset Browser**
Allows you to load or save an instrument preset.
- 7. Input Options**
This lights up when MIDI data is received by the instrument. Click this button to open a pop-up menu that allows you to select, mute/unmute, and solo/unsolo for tracks that send MIDI to the instrument (inputs).

NOTE

If you resize the VST Instruments window, you can access this option by using an **Input/Output Options** pop-up menu.

- 8. Activate Outputs**
This control is only available if the instrument provides more than one output. It allows you to activate one or more outputs for the instrument.

NOTE

If you resize the VST Instruments window, you can access this option by using an **Input/Output Options** pop-up menu.

- 9. Read/Write Automation**
Allows you to read/write automation for the instrument parameter settings.
- 10. Select Quick Control Layer**
Allows you to select a program.

RELATED LINKS

[Freezing Instruments](#) on page 604

[Side-Chain Input for VST Instruments](#) on page 610

VST Instrument Context Menu

The following functions are available in the instruments context menu:

Copy/Paste instrument Setting

Allows you to copy the instrument settings and paste them to another instrument.

Load/Save Preset

Allows you to load/save an instrument preset.

Default Preset

Allows you to define and save a default preset.

Switch to A/B Setting

Activates the setting A or B.

Copy A to B

Copies the effect parameters of effect setting A to effect setting B.

Activate Outputs

Allows you to activate one or more outputs for the instrument.

Activate Side-Chain

Activates/Deactivates side-chain input for the instrument.

NOTE

This option is only available for VST 3 instruments that support side-chaining.

Remote Control Editor

Opens the **Remote Control Editor**.

RELATED LINKS

[Side-Chain Input for VST Instruments](#) on page 610

Presets for Instruments

You can load and save presets for instruments. These contain all the settings that are required for the sound that you want.

The following presets for instruments are available:

- **VST presets** include the parameter settings of a VST instrument. These are available from the **VST instruments** window, from the instrument control panels, and from the **Programs** field in the Inspector.
- **Track presets** include the instrument track settings and the settings for the corresponding VST instrument. These are available from the Inspector or the track list context menu.

Loading VST Presets

You can load **VST presets** from the **VST instruments** window, from the instrument panel or from the Inspector.

PROCEDURE

1. Do one of the following:
 - Select the track that contains the VST instrument and in the **Inspector**, click the **Programs** field.
 - In the **VST Instruments** window, click **Preset Browser** for the instrument, and select **Load Preset**.
 - In the control panel for the VST instrument, click **Preset Browser**, and select **Load Preset**.
2. In the preset browser, select a preset from the list and double-click it to load it.

RESULT

The preset is applied. To return to the previously loaded preset, open the preset browser again and click **Revert to Last Setting**.

Saving VST Presets

You can save your settings on VST instruments as VST presets for further use.

PROCEDURE

1. Do one of the following:
 - In the **VST Instruments** window, click **Preset Browser** for the instrument, and select **Save Preset**.
 - In the control panel for the VST instrument, click **Preset Browser**, and select **Save Preset**.
2. In the **Save <VST instrument name> Preset** dialog, enter a name for the preset.
3. Optional: Click **Show Attribute Inspector** and define attributes for the preset.
4. Click **OK** to save the preset and close the dialog.

Loading Track Presets

You can load track presets for instrument tracks from the Inspector.

PROCEDURE

1. Do one of the following:
 - Select the instrument track and in the Inspector, click the **Load Track Preset** field.
 - Right-click the instrument track and from the context menu, select **Load Track Preset**.
2. In the preset browser, select a preset from the list and double-click it to load it.

RESULT

The track preset is applied. To return to the previously loaded preset, open the preset browser again and click **Revert to Last Setting**.

Saving Track Presets

You can save your settings on instrument tracks as track presets for further use.

PROCEDURE

1. Do one of the following:
 - Select the instrument track and in the Inspector, click **Save Track Preset**.
 - Right-click the instrument track and from the context menu, select **Save Track Preset**.
 2. In the **Save Track Preset** dialog, enter a name for the preset.
 3. Optional: Click **Show Attribute Inspector** and define attributes for the preset.
 4. Click **OK** to save the preset and close the dialog.
-

Playing Back VST Instruments

After you have added a VST instrument and selected a sound, you can play back the VST instrument using the instrument or MIDI track in your project.

PROCEDURE

1. In the track list, activate **Monitor** for the track that has the VST instrument loaded.
 2. Press one or more keys on your MIDI keyboard or use the virtual keyboard.
The corresponding sounds are triggered on your VST instrument.
 3. Select **Devices > MixConsole** to open the **MixConsole** and adjust the sound, add EQ or effects, assign another output routing, etc.
-

VST Instruments and Processor Load

VST instruments can consume a lot of CPU power. The more instruments you add, the more likely you will run out of processor power during playback.

If the CPU overload indicator in the **VST Performance** window lights up or you get crackling sounds, you have the following options:

- Activate **Freeze** for instruments.
This renders the instrument into an audio file and unloads it.
- Activate **Suspend VST 3 plug-in processing when no audio signals are received** for VST 3 instruments.
This ensures that your instruments do not consume CPU power on silent passages.

RELATED LINKS

[Freezing Instruments](#) on page 604

[Suspend VST 3 plug-in processing when no audio signals are received](#) on page 1026

Freezing Instruments

If you are using a moderately powerful computer or a large number of VST instruments, your computer may not be able to play back all instruments in realtime. At this point, you can freeze instruments.

PROCEDURE

1. Do one of the following:

- Select **Devices > VST Instruments**.
 - Select the instrument track and open the top **Inspector** section.
2. Click **Freeze**.
 3. In the **Freeze Instrument Options** dialog, make your settings.
 4. Click **OK**.
-

RESULT

- The instrument is rendered to an audio file and on playback you hear the same sound as before freezing.
- Less CPU load is used.
- The **Freeze** button lights up.
- The MIDI/instrument track controls are grayed out.
- The MIDI parts are locked.

NOTE

To edit the tracks, parameters, or synth channels again, and to delete the rendered file, unfreeze the instrument by clicking **Freeze** again.

Freeze Instrument Options

The **Freeze Instrument Options** dialog opens when you click **Freeze**. It allows you to specify exactly what should happen if you freeze an instrument.

The following controls can be found in the **Freeze Instrument Options** dialog:

Freeze Instrument Only

Activate this option if you still want to be able to edit insert effects on the synth channel after freezing the instrument.

Freeze Instrument and Channels

Activate this option if you do not need to edit the insert effects on your synth channels.

NOTE

You can still adjust level, pan, sends, and EQ.

Tail Size

Allows you to set a Tail Size time to let sounds complete their normal release cycle.

Unload Instrument when Frozen

Activate to unload the instrument after freezing. This makes the RAM available again.

About Latency

The term latency stands for the time it takes for the instrument to produce a sound when you press a key on your MIDI controller. It can be an issue when using VST instruments in realtime. Latency depends on your audio hardware and its ASIO driver.

In the **Device Setup** dialog (**VST Audio System** page), the input and output latency values should ideally be a few milliseconds.

If the latency is too high to allow comfortable realtime VST instrument playback from a keyboard, you can use another MIDI sound source for live playback and recording, and switch to the VST instrument for playback.

RELATED LINKS

[Selecting an Audio Driver](#) on page 14

Delay Compensation

During playback Cubase automatically compensates any delay inherent in the VST plug-ins you use.

You can specify a **Delay Compensation Threshold** in the **Preferences** dialog (**VST** page) so that only plug-ins with a delay higher than this threshold setting are affected.

Constrain Delay Compensation

To avoid Cubase to add latency when you play a VST instrument in realtime or record live audio, you can activate **Constrain Delay Compensation**. This minimizes the latency effects of the delay compensation, while maintaining the sound of the mix as far as possible.

Constrain Delay Compensation  is available on the **Project** window toolbar and in the **Transport** zone. You can also find it as a menu item in the **MixConsole** on the **Functions** menu.

Activating **Constrain Delay Compensation** turns off VST plug-ins which are activated for VST instrument channels, audio track channels that are record-enabled, group channels, and output channels. VST plug-ins which are activated for FX channels are disregarded. After recording or using a VST instrument **Constrain Delay Compensation** should be deactivated again in order to restore full delay compensation.

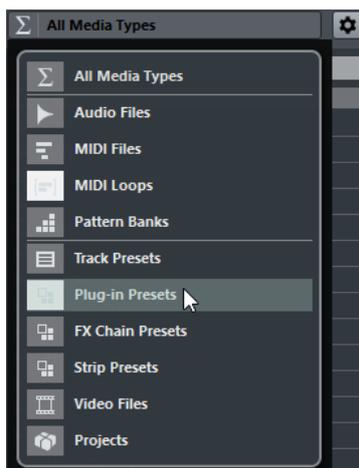
Import and Export Options

Importing MIDI Loops

You can import MIDI loops (file extension .midiloop) in Cubase. These files contain MIDI part information (MIDI notes, controllers, etc.) and all the settings that are saved in instrument track presets. This way, you can reuse instrument patterns in other projects or applications, for example.

PROCEDURE

1. Select **Media > MediaBay**.
2. Optional: In the **Results** section, open the **Select Media Types** menu, and activate **MIDI Loops** and **Plug-in Presets**.



3. In the results list, select a MIDI loop and drag it to an empty section in the **Project** window.

RESULT

An instrument track is created and the instrument part is inserted at the position where you dragged the file. The **Inspector** reflects all settings that are saved in the MIDI loop, for example, the VST instrument that was used, applied insert effects, track parameters, etc.

NOTE

You can also drag MIDI loops onto existing instrument or MIDI tracks. However, this only imports the part information. This means this part only contains the MIDI data (notes, controllers) that is saved in the MIDI loop, but no inspector settings or instrument parameters.

RELATED LINKS

[Presets for Instruments](#) on page 602

[Filtering According to Media Type](#) on page 537

Exporting MIDI Loops

You can export MIDI loops to save a MIDI part together with its instrument and effect settings. This allows you to reproduce patterns that you created without having to search for the correct sound, style, or effect.

PROCEDURE

1. Select an instrument part.
2. Select **File > Export > MIDI Loop**.
3. In the **New MIDI Loop** section, enter a name for the MIDI loop.
4. Optional: To save attributes for the MIDI loop, click the button below the **New MIDI Loop** section at the bottom left.
The **Attribute Inspector** section opens, allowing you to define attributes for your MIDI loop.
5. Click **OK** to close the dialog and save the MIDI loop.

RESULT

MIDI Loop files are saved in the following folder:

Windows: \Users\\AppData\Roaming\Steinberg\MIDI Loops

Mac OS: /Users/<user name>/Library/Application Support/Steinberg/MIDI Loops/

The default folder cannot be changed. However, you can create subfolders within this folder to organize your MIDI loops. To create a subfolder, click **New Folder** in the **Save MIDI Loop** dialog.

Exporting Instrument Tracks as MIDI File

You can export instrument tracks as standard MIDI files.

NOTE

- As there is no MIDI patch information in an instrument track, this information is missing in the resulting MIDI file.
- If you activate **Export Inspector Volume/Pan**, volume and pan information of the VST instrument are converted and written into the MIDI file as controller data.

RELATED LINKS

[Exporting MIDI files](#) on page 964

VST Quick Controls

VST Quick Controls allow you to remote-control a VST instrument from within the **VST Instruments** window.

To show the VST Quick Controls on the **VST Instruments** window, activate **Show/Hide all VST Quick Controls**.

The following controls are available on each rack:



1. **Show/Hide VST Quick Controls**
Allows you to show/hide the VST Quick Controls for the instrument.
2. **VST Quick Controls**
Allow you to remote-control the parameters of the instrument.

NOTE

The number of VST Quick Controls that are shown depends on the size of the **VST Instruments** window.

3. **Set Remote-Control Focus for VST Quick Controls**
Allows you to activate the VST Quick Controls to remote-control the instrument.

RELATED LINKS

[Remote controlling Cubase](#) on page 623

Connecting Quick Controls with Remote Controllers

Quick Controls become powerful when used in combination with a remote controller.

PREREQUISITE

Your remote device is connected to Cubase via MIDI.

PROCEDURE

1. Select **Devices > Device Setup**.
2. In the **Devices** list, select **Track Quick Controls** or **VST Quick Controls**.
This opens the respective section on the right.
3. From the **MIDI Input** pop-up menu, select the MIDI port on your computer.
If your remote controller has its own MIDI input and supports MIDI feedback, you can connect your computer to the device input. Select the corresponding MIDI port in the **MIDI Output** pop-up menu.
Alternatively, you can select **All MIDI Inputs**.
4. Click **Apply**.
5. Activate **Learn**.
6. In the **Control Name** column, select **QuickControl 1**.
7. On your remote control device, move the control that you want to use for the first quick control.
8. Select the next slot in the **Control Name** column and repeat the previous steps.
9. Click **OK**.

NOTE

In addition to using the Learn function to set up the table in the **Quick Controls** section, you can modify the values manually. The available options are identical to the ones available for the Generic Remote device.

RESULT

The quick controls are now associated with control elements on your external remote controller. If you move a control element, the value of the parameter that is assigned to the corresponding Quick Control changes accordingly.

The remote controller setup for Quick Controls is saved globally, that is, it is independent of any projects. If you have various remote controllers, you can save and load several Quick Control setups clicking **Export** and **Import**.

RELATED LINKS

[The Generic Remote device](#) on page 627

Activating Pick-up Mode for Hardware Controls

Pick-up Mode allows you to change configured Quick Control parameters without accidentally modifying their previous values.

Often, the parameter settings of your Quick Controls are initially different from the settings of your hardware controls, for example, when the hardware controls control, different Quick Controls on different tracks. In this case, you will notice that moving a hardware control changes the previous value of a parameter in a way that it is initially set to the zero position, before it is changed. Thus, you always lose your previous setting of the parameter.

To avoid this, you can activate **Pick-up Mode**. This has the effect that when you move your hardware control, you can only change the parameter once the control reaches the parameter's previous value. The control picks up the parameter at the value to which it was last set.

NOTE

This only applies to hardware controllers whose controls use specific ranges.

PROCEDURE

1. Select **Devices > Device Setup**.
 2. In the **Devices** list, select **Track Quick Controls** or **VST Quick Controls**.
 3. Activate **Pick-up Mode**.
 4. Click **OK**.
-

Side-Chain Input for VST Instruments

You can send audio into VST 3 instruments that feature a side-chain input. Side-chaining allows you to use the output of one track to control the action of an instrument on another track.

Depending on the instrument, activating its side-chain input allows you to:

- Use the instrument as an effect plug-in on audio events.
- Use the side-chain signal as a modulation source.
- Apply ducking to the instrument, that is, reduce the volume of the instrument track when a signal is present on the audio track.

You can route the audio signal to the side-chain input of an instrument in different ways:

- To process the audio signal completely through the instrument, route the output of the audio track to the side-chain input of an instrument.
- To use both the clean audio signal and the signal processed by the instrument, route a send to the instrument side-chain.

NOTE

To hear the audio played through the instrument, you must trigger a note, either by playing MIDI events or by playing notes on your external MIDI keyboard.

RELATED LINKS

[Using Instruments as Effects on Audio Tracks](#) on page 610

Using Instruments as Effects on Audio Tracks

You can use instruments that support side-chaining to modify the audio on audio tracks. The following example shows you how to apply the parameters in Retrologue to a drum loop.

PREREQUISITE

You have a drum loop on an audio track. You have created an instrument track with Retrologue loaded.

PROCEDURE

1. In the header of the Retrologue panel, click **Activate Side-Chain**.
2. Open the **Output Routing** pop-up menu in the **Inspector** for the audio track and select the side-chain input of Retrologue.
3. On the Retrologue panel in the **Oscillator Mix** section, adjust the **Input Level** control. This adjusts the input level of the incoming audio.
4. Optional: Deactivate oscillators **OSC 1**, **OSC 2**, and **OSC 3**.
5. Do one of the following:
 - On the instrument track, create a MIDI event, set up a cycle with the left and right locators, and activate cycle mode.

- Play notes on your MIDI keyboard.

NOTE

For this to work, your MIDI keyboard must be installed and set up.

RESULT

When a note is played, the drum loop is played back through Retrologue.

AFTER COMPLETING THIS TASK

Use Retrologue to modify the sound of your drum loop. For example, you can do the following:

- Use the filter and distortion settings on the **Synth** page.
- Modulate the input signal. To do this, select **Modulation Matrix > Destination > Oscillator > Audio Input**.
- Set up a rhythmical modulation on the **Arp** page.
- Use the effects on the **FX**, page, for example the **Resonator**.

NOTE

For detailed information about Retrologue and its parameters, see the separate PDF document **Retrologue**.

External Instruments (Cubase Pro only)

An external instrument bus is an input (return) to your audio hardware, along with a MIDI connection via Cubase and few additional settings.

External instrument busses are created in the **VST Connections** window. All external instrument busses that you have created will appear on the **VST Instrument** pop-up menus and can be selected in the same way as any VST instrument plug-in.

If you select an external instrument, you play it via MIDI as usual (you have to create a MIDI device to play it) and the sound (synth audio output) will come in to the VST environment where you can apply processing, etc.

RELATED LINKS

[Setting Up External Instruments](#) on page 37

Installing and Managing Plug-ins

Installing VST plug-ins

Cubase supports the VST 2 and VST 3 plug-in standards. You can install effects and instruments that comply with these formats.

A plug-in is a piece of software that adds a specific functionality to Cubase. The audio effects and instruments that are used in Cubase are VST plug-ins.

Effect or instrument plug-in normally have their own installation application. Read the documentation or readme files before installing new plug-ins.

When you scan for newly installed plug-ins or relaunch Cubase, the new effects appear on the effect selectors.

Cubase comes with a number of effect plug-ins included. These effects and their parameters are described in the separate PDF document **Plug-in Reference**.

Plug-in Manager

The **Plug-in Manager** provides lists of the effects and VST instruments that are installed on your computer. These lists are used in the selectors for VST instruments and effects.

The **Plug-in Manager** allows you to do the following:

- You can view lists of all effects and VST instruments that are loaded by Cubase when you launch the program.
The lists of all effects or VST instruments are created automatically every time you start Cubase. You can also initiate a rescan at any time. This ensures that these lists are always up-to-date.
- You can create your own lists of effects or instruments for use in the selectors for effects or instruments. User-defined lists are called collections.
Collections allow you to create sub-sets of the available effects or instruments, for example, to give you a better overview of the effects used in a project.

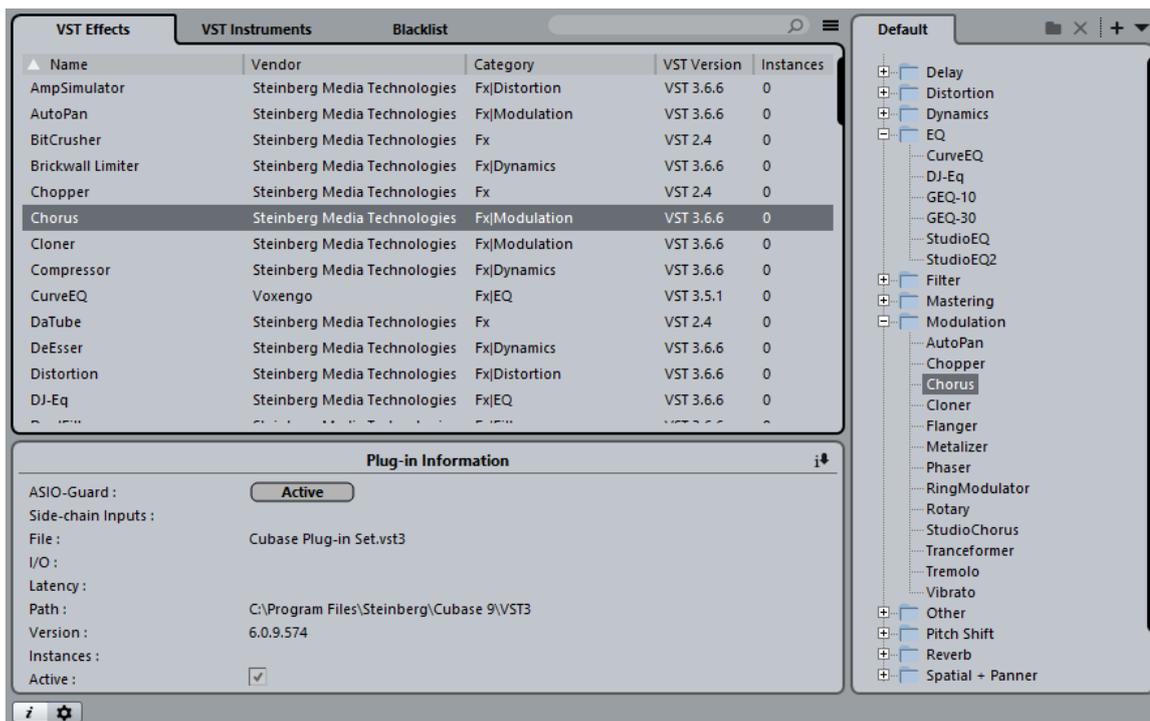
NOTE

If an installed effect or instrument cannot be loaded by Cubase, it does not appear in the list of all effects or instruments. Also, the effect or instrument is grayed out in any collections in which it is included. For example, this can happen if a copy-protection dongle required to run the effect or instrument is missing, or after uninstalling a plug-in.

Plug-in Manager Window

You can manage your effects and VST instruments in the **Plug-in Manager** window.

- To open the **Plug-in Manager** window, select **Devices > Plug-in Manager**.



The **Plug-in Manager** window shows the following:

VST Effects

This tab lists all VST effects that are loaded in Cubase. You can sort the list by name, vendor, category, etc. by clicking the corresponding column heading.

VST Instruments

This tab lists all VST instruments that are loaded in Cubase. You can sort the list by name, vendor, category, etc. by clicking the corresponding column heading.

Blacklist

This tab lists all VST effects and VST instruments that are installed on your system but not loaded in Cubase. These plug-ins might lead to stability problems or even cause the program to crash. As Cubase does not support 32-bit, all 32-bit plug-ins are shown in this list.

NOTE

You can reactivate a blacklisted 64-bit plug-in by selecting it and clicking **Reactivate**. This causes Cubase to rescan the plug-in and remove it from the blacklist. To move the plug-in back to the blacklist, you must rescan all plug-ins and restart Cubase.

Collection list

By default, the window section to the right shows the **Default** collection, which contains all effects or VST instruments loaded by the program. The **Default** collection cannot be changed.

You can compile your own collections of effects or VST instruments by clicking **New Collection** and dragging and dropping items from the list of all effects or VST instruments to the collection list.

Collections are shown in the selectors for effects/VST instruments, and all changes made to collections in the **Plug-in Manager** are immediately reflected in the selectors.

Search Field



Enter the name of a plug-in in the search field. The list of all effects or VST instruments is filtered to show only those plug-ins whose names contain the text that you entered.

Toggle list to show all/show only FX/VSTi not in current collection



Allows you to filter the lists of all effects or VST instruments to show either all loaded plug-ins, or only those that are not part of the current collection.

New Folder



Allows you to create a new folder in the current collection.

Delete



Allows you to delete the selected item in the current collection.

New Collection



Allows you to create a new collection.

To create a new, empty list, select **Empty**. To create a new collection based on the list of all effect, select **Add All Plug-ins**. To create a new collection based on the current collection, select **Add Current Collection**.

User Collections



Allows you to select a different collection, and to rename or delete the current collection.

To remove unavailable plug-ins from all collections, select **Remove Unavailable Plug-ins from All Collections**.

Show Plug-in Information



Opens a section at the bottom of the window in which more information about the selected item is shown. If you select several plug-ins, the information for the plug-in that you have selected first is shown. In this section, you can also deactivate selected plug-ins. Deactivated plug-ins are no longer available in collections. This is useful if you have plug-ins installed that you do not want to use in Cubase.

Plug-in Manager Settings



Opens a section at the bottom of the window in which all current paths to VST 2 plug-ins are listed. You can add or remove folder locations by using the corresponding buttons. Click **Rescan All** to rescan your computer for plug-ins.

RELATED LINKS

[Plug-in Manager](#) on page 612

Compiling a New Effects Collection

You can create a new collection of effects or VST instruments for use in the plug-in selectors.

PREREQUISITE

A number of effect plug-ins is correctly installed on your computer, and these plug-ins are listed on the **VST Effects** tab of the **Plug-in Manager** window.

PROCEDURE

1. In the **Plug-in Manager** window, click **New Collection** and do one of the following:
 - To create a new collection based on the list of all effects, select **Add All Plug-ins**.
 - To create a new collection based on the current collection, select **Copy Current Collection**.



2. Enter a name for the new collection and click **OK**.
 3. Drag items from the list of all effects and drop them to the new collection. A line indicates the drop position.
 - Click **New Folder** to create folders and place items directly in them.
 - You can drag items to new positions within the collection.
 - Drag items from the collection list to the list of all plug-ins to delete them, or select items and click **Delete**.
-

RESULT

The new collection is saved automatically and made available in the plug-in selectors.

The procedure is the same for compiling collections of VST instruments.

Track Quick Controls

Cubase can give you instant access to up to 8 different parameters, for example, track, effect, or instrument controls. This is done with the aid of the Quick Controls, set up in the **Quick Controls** section of the **Inspector** for the corresponding track.

The **Quick Controls** section can be used as a kind of track control center, an area in which your most important parameters are assembled in one place. This saves you from having to click your way through the various windows and sections pertaining to your track.

Cubase also allows you to assign these Quick Controls very quickly to an external remote control device. This does not only give you manual control of your most important track parameters, but also allows you to conveniently use an external MIDI device such as a foot controller to control effect parameters.

- Quick Control assignments are saved with the current project.
- Since Quick Control settings are part of the track setup, you can save them as track presets, allowing you to re-use your settings across different projects.
- You can automate the parameter settings in the **Quick Controls** section using the **Read/Write** buttons (**R** and **W**).
- You can also assign parameters to Quick Controls in the MixConsole.

RELATED LINKS

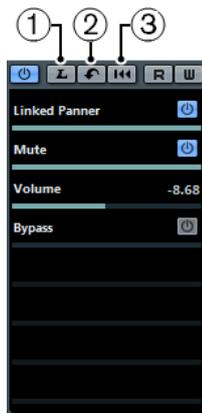
[Track Presets](#) on page 177

[Automation](#) on page 578

[Channel Racks](#) on page 308

Assigning Parameters to Quick Controls

The **Quick Controls** section shows eight slots, one for each quick control. To start with, these slots are empty. Parameters can be assigned manually or retrieved automatically.



1. QC Learn Mode
2. Get default QCs from Plug-in

3. Remove all QC Assignments

Assignment via the Learn Function

Using **QC Learn Mode** in the **Quick Controls** section in the Inspector, you can assign a parameter by moving the corresponding control.

This procedure applies to all automatable controls.

PROCEDURE

1. In the **Inspector** for your track, open the **Quick Controls** section.
 2. Activate **QC Learn Mode**.
 3. Select the slot to which you want to assign a parameter.
 4. Use the desired control.
-

Assignment via Plug-in Panels

You can assign effect parameters to Quick Control slots directly from within plug-in panels.

You can assign an effect parameter either to the next empty slot or to a specific Quick Control slot.

NOTE

These options are only available for VST 3 plug-ins that support this function.

PROCEDURE

- Right-click the parameter.
 - To assign the parameter to the next empty slot, select **Add "x" to Quick Controls** (where x is the name of the parameter).
 - To assign the parameter to a specific slot, select **Add "x" to Quick Controls Slot** (where x is the name of the parameter). Then select the slot from the submenu.
-

Assigning Parameters from Racks or Channel Settings

You can assign several parameters to Quick Control slots directly from within racks or channel settings in the **MixConsole**.

Some specific racks and channel settings allow you to add several parameters directly to the **Quick Controls** section in the **Inspector**.

- Pre (Filters/Gain/Phase)
- Equalizers
- Channel Strip

You can assign an effect parameter either to the next empty slot or to a specific Quick Control slot.

NOTE

These options are only available for VST 3 plug-ins that support this function.

PROCEDURE

- Right-click the parameter.
 - To assign the parameter to the next empty slot, select **Add “x” to Quick Controls** (where x is the name of the parameter).
 - To assign the parameter to a specific slot, select **Add “x” to Quick Controls Slot** (where x is the name of the parameter). Then select the slot from the submenu.
-

RELATED LINKS

[Track Quick Controls](#) on page 616

Manual Assignment via the Inspector Section

You can assign track parameters manually.

PROCEDURE

1. In the **Inspector** for your track, open the **Quick Controls** section.
2. In the **Quick Controls** section, click on the first Quick Control slot. A pop-up menu opens. It lists all parameters accessible for this particular track.
3. Double-click the parameter that you want to assign to the first Quick Control slot. The parameter name and its value are displayed in the slot. You can change the value by dragging the slider.



The track's main volume parameter is assigned to Quick Control 1.

4. Repeat these steps for each Quick Control slot until all slots are associated with track parameters.
-

RESULT

You can now control the functions most important to you via one single Inspector section.

- To rename a Quick Control, double-click on the name in the slot to select it, enter a new name and press **Enter**.
- To replace a parameter assignment with a different parameter, click on the corresponding Quick Control slot and double-click a different parameter.

Automatic Assignment of VST Instrument Parameters

When you create an instrument track or load a VST instrument via the **VST Instruments** window including creating an associated MIDI track, the main parameters of the instrument are automatically assigned to the slots in the **Quick Controls** section in the Inspector.

NOTE

This only works if the VST instrument supports this feature.

If you have changed the parameter assignment or if you manually route a MIDI track to a VST instrument, you can retrieve the default assignments.

PROCEDURE

1. In the **Inspector** for your track, open the **Quick Controls** section.

2. Click **Get Default QCs from Plug-in**.
-

Removing Parameter Assignments

- To remove a parameter from a slot, double-click the parameter name to select it and press the **Delete** or **Backspace** key. Confirm by pressing **Return**.
Alternatively, you can click in the corresponding slot and select **No parameter** from the pop-up menu.
- To remove the Quick Control assignments for all slots, click **Remove All QC Assignments**.

Showing Automated Quick Control Assignments

You can show all Quick Control assignments that have been automated for one track.

PROCEDURE

1. Click the track for which you want to show automated Quick Control assignments.
 2. In the **Inspector** for your track, open the **Quick Controls** section.
 3. In the **Quick Controls** section, click **Preset Management** .
 4. Select **Show Automated QC Assignments**.
-

RESULT

The automation tracks of the automated Quick Control parameters open for the selected track.

NOTE

- If **Volume** is assigned as a Quick Control parameter, it is always shown as automated, independent of whether it is automated or not.
 - You can also show automated Quick Control assignments via the **Track Quick Controls** rack in the **MixConsole**.
-

Saving/Loading Track Quick Control Assignments as Presets

You can save and load your own Quick Control assignments as presets for audio, instrument, MIDI, FX, and group tracks. You can also use the factory presets.

PROCEDURE

1. In the **Inspector** for your track, open the **Quick Controls** section.
For instrument tracks, the Track Quick Controls are automatically set to the 8 default VST Quick Controls of the loaded instrument by default.

NOTE

You can also make your own assignments and save them as presets and delete, rename, or reset the presets to the default assignments.

2. In the Quick Controls section, click **Preset Management** .
 - To save a preset, click **Save Preset**.
Enter a name in the **Type In Preset Name** dialog and click **OK**.
 - To load a preset, select one of the presets in the upper list of the menu.
The Track Quick Control assignment changes and gives you access to the channel parameters.
-

RELATED LINKS

[Manual Assignment via the Inspector Section](#) on page 618

Connecting Quick Controls with Remote Controllers

Quick Controls become powerful when used in combination with a remote controller.

PREREQUISITE

Your remote device is connected to Cubase via MIDI.

PROCEDURE

1. Select **Devices > Device Setup**.
2. In the **Devices** list, select **Track Quick Controls** or **VST Quick Controls**.
This opens the respective section on the right.
3. From the **MIDI Input** pop-up menu, select the MIDI port on your computer.
If your remote controller has its own MIDI input and supports MIDI feedback, you can connect your computer to the device input. Select the corresponding MIDI port in the **MIDI Output** pop-up menu.
Alternatively, you can select **All MIDI Inputs**.
4. Click **Apply**.
5. Activate **Learn**.
6. In the **Control Name** column, select **QuickControl 1**.
7. On your remote control device, move the control that you want to use for the first quick control.
8. Select the next slot in the **Control Name** column and repeat the previous steps.
9. Click **OK**.

NOTE

In addition to using the Learn function to set up the table in the **Quick Controls** section, you can modify the values manually. The available options are identical to the ones available for the Generic Remote device.

RESULT

The quick controls are now associated with control elements on your external remote controller. If you move a control element, the value of the parameter that is assigned to the corresponding Quick Control changes accordingly.

The remote controller setup for Quick Controls is saved globally, that is, it is independent of any projects. If you have various remote controllers, you can save and load several Quick Control setups clicking **Export** and **Import**.

RELATED LINKS

[The Generic Remote device](#) on page 627

Activating Pick-up Mode for Hardware Controls

Pick-up Mode allows you to change configured Quick Control parameters without accidentally modifying their previous values.

Often, the parameter settings of your Quick Controls are initially different from the settings of your hardware controls, for example, when the hardware controls control, different Quick Controls on different tracks. In this case, you will notice that moving a hardware control changes

the previous value of a parameter in a way that it is initially set to the zero position, before it is changed. Thus, you always lose your previous setting of the parameter.

To avoid this, you can activate **Pick-up Mode**. This has the effect that when you move your hardware control, you can only change the parameter once the control reaches the parameter's previous value. The control picks up the parameter at the value to which it was last set.

NOTE

This only applies to hardware controllers whose controls use specific ranges.

PROCEDURE

1. Select **Devices > Device Setup**.
 2. In the **Devices** list, select **Track Quick Controls** or **VST Quick Controls**.
 3. Activate **Pick-up Mode**.
 4. Click **OK**.
-

Quick Controls and Automatable Parameters

You can use Quick Controls not only to access certain parameters of the current track, but also to control all automatable parameters. This makes it possible to use the **Quick Controls** section of a dedicated track as a kind of "mini mixer", controlling parameters on other tracks.

IMPORTANT

Use this function with caution, however, as you might accidentally modify parameters on other tracks.

PROCEDURE

1. Create a new, empty audio track and open the **Quick Controls** section. This track has no events or parts.
2. Hold down the **Ctrl/Cmd** key and click on the slot for Quick Control 1. The parameter selection context menu opens, but it lists not the parameters of the current track, but all automatable parameters.
3. Open the **VST Mixer** folder.



The pop-up menu lists all channels available in the MixConsole of your current project.

4. Assign a parameter of one particular channel to Quick Control 1, and another parameter of another channel to Quick Control 2.



RESULT

The **Quick Controls** section has become a secondary mixer, dedicated to quick-controlling parameters on other tracks.

IMPORTANT

Quick Controls that are assigned that way cannot work when saved as track presets.

Remote controlling Cubase

It is possible to control Cubase via MIDI.

A large number of MIDI control devices is supported. This chapter describes how to set up Cubase for remote control. The supported devices are described in the separate PDF document **Remote Control Devices**.

There is also a Generic Remote Device option, allowing you to use any MIDI controller to remote control Cubase.

RELATED LINKS

[The Generic Remote device](#) on page 627

Setting Up

Connecting the remote device

Connect the MIDI output on the remote unit to a MIDI input on your MIDI interface. Depending on the remote unit model, you may also need to connect a MIDI Out on the interface to a MIDI In on the remote unit (this is necessary if the remote unit features “feedback devices” such as indicators, motorized faders, etc.).

If you are recording MIDI tracks, you do not want any MIDI data from the remote unit to be accidentally recorded as well. To avoid this, you should make the following setting:

PROCEDURE

1. Open the Device Setup dialog from the Devices menu.
2. Select “MIDI Port Setup” in the list on the left.
3. Check the table on the right and locate the MIDI input to which you have connected the MIDI remote unit.
4. Deactivate the checkbox in the “In ‘All MIDI Inputs’” column for that input, so that the State column reads “Inactive”.
5. Click OK to close the Device Setup dialog.

RESULT

Now you have removed the remote unit input from the “All MIDI Inputs” group. This means that you can record MIDI tracks with the “All MIDI Inputs” port selected without risking to record the data from the remote unit at the same time.

Selecting a remote device

PROCEDURE

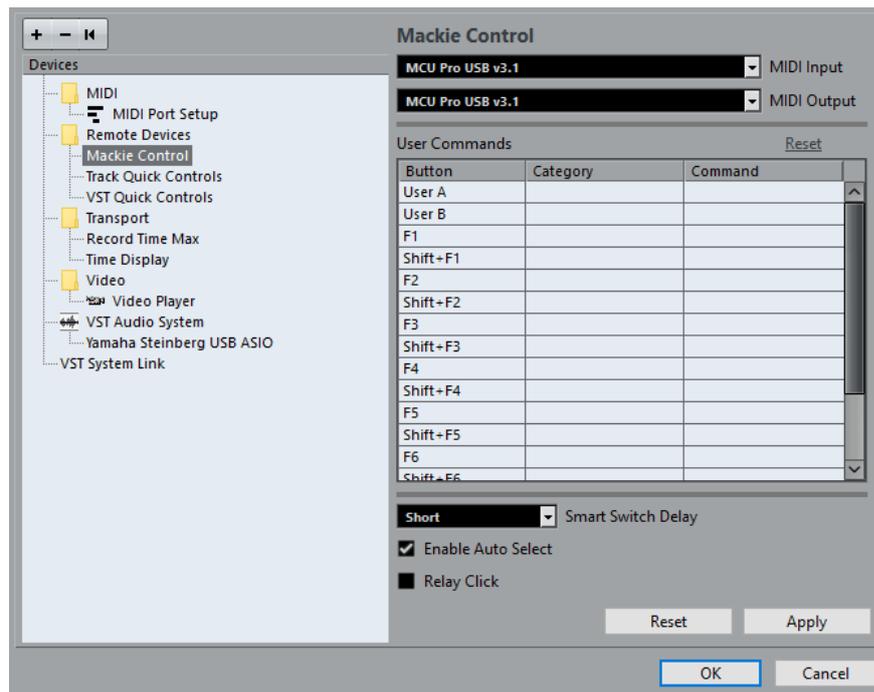
1. Open the Device Setup dialog from the Devices menu.

- If you cannot find the remote device you are looking for, click on the plus sign in the top left corner and select the device from the pop-up menu.
The selected device is added to the Devices list.

NOTE

Note that it is possible to select more than one remote device of the same type. If you have more than one remote device of the same type, these will be numbered in the Devices list. For example, to be able to use a Mackie Control Extender, you must install a second Mackie control device.

- Select your MIDI control device model from the Devices list.
Depending on the selected device, either a list of programmable function commands or a blank panel is shown in the right half of the dialog window.



- Select the correct MIDI input from the pop-up menu.
If necessary, select the correct MIDI output from the pop-up menu.
- Click OK to close the dialog.

RESULT

You can now use the MIDI control device to move faders and knobs, activate Mute and Solo, etc. The exact parameter configuration depends on which external MIDI control device you are using.

A bright stripe in the Project window and in the MixConsole indicates which channels are linked to the remote control device.



IMPORTANT

Sometimes communication between Cubase and a remote device is interrupted or the handshaking protocol fails to create a connection. To re-establish communication with any device

in the Devices list, select it and click the Reset button in the lower part of the Device Setup dialog. The “Send Reset Message to all Devices” button at the top left of the dialog next to the “+” and “-” buttons will reset every device in the Devices list.

Operations

Global options for remote controllers

In the Device Setup dialog, on the page for your remote device, some (or all) of the following global functions may be available (depending on your remote device):

Bank pop-up menu

If your remote device contains several banks, you can select the bank you want to use.

The bank you select here is used by default when Cubase is launched.

Smart Switch Delay

Some of the Cubase functions (e. g. Solo and Mute) support the so called smart switch behavior: In addition to regular activation/deactivation of a function by clicking a button, you can also activate the function for as long as the button is pressed. Upon releasing the mouse button, the function is deactivated.

This pop-up menu allows you to specify how long a button must be pressed before it goes into smart switch mode. When “Off” is selected, the smart switch function is deactivated in Cubase.

Enable Auto Select

If this option is activated, touching a fader on a touch-sensitive remote control device automatically selects the corresponding channel. On devices without touch-sensitive faders, the channel gets selected as soon as you move the fader.

Writing automation using remote controls

Automating the MixConsole in Touch mode using a remote control device is done in the same way as when you operate on-screen controls in Write mode. In order to replace existing automation data for a control in Touch mode, the computer needs to know how long the user actually “grabbed” or used the control. When doing this “on screen”, the program simply detects when the mouse button is pressed and released. When you are using an external remote control device without touch-sensitive controls, Cubase cannot tell whether you “grab and hold” a fader or simply move it and release it.

Therefore, when you are using a device without touch-sensitive controls and want to replace existing automation data, pay attention to the following:

- If you activate Write mode and move a control on the remote control device, all data for the corresponding parameter is replaced from the position where you moved the control, up to the position where playback is stopped.
In other words, as soon as you move a control in Write mode, it remains “active” until you stop playback.
- Make sure that you move only the controller you want to replace.

Assigning remote key commands

For some remote devices, you can assign any Cubase function (to which a key command can be assigned) to generic buttons, wheels, or other controls.

PROCEDURE

1. Open the Device Setup dialog and select your remote device.
On the right side of the window you will find a table. This is where you assign commands.
2. Use the Button column to locate a remote device control or button to which you want to assign a Cubase function.
3. Click in the Category column for the control and select one of the Cubase function categories from the pop-up menu.
4. Click in the Command column and select the desired Cubase function from the pop-up menu.
The available items on the pop-up menu depend on the selected category.
5. Click "Apply" when you are done.
Click "Reset" to revert to the default settings.

RESULT

The selected function is now assigned to the button or control on the remote device.

A note about remote controlling MIDI tracks

While most remote control devices will be able to control both MIDI and audio channels in Cubase, the parameter setup may be different. For example, audio-specific controls (such as EQ) will be disregarded when controlling MIDI channels.

Accessing device panel parameters via remote control devices (Cubase Pro only)

Cubase allows you to control external MIDI devices through user device panels.

When you have assigned project parameters to a device panel to be displayed in the MixConsole (i. e. when creating the panel, you must select the Channel Strip Size option in the Add Panel dialog), you can access these parameters through some of the remote control devices supported by Cubase.

This feature is supported for the following devices:

- Steinberg Houston
- Mackie Control
- Mackie HUI
- Yamaha DM 2000
- CM Motormix
- SAC2K

These remote control devices provide an extra display page in the Inserts section for the selected channel.

This page is called User and is displayed as the 9th insert page for audio channels and as the 5th insert page for MIDI channels. It allows you to control the parameters assigned to your user device panel from your remote control device.

The Generic Remote device

If you have a generic MIDI controller, you can use this for remote control of Cubase by setting up the Generic Remote device:

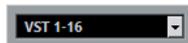
PROCEDURE

1. Open the Device Setup dialog on the Devices menu.

If the Generic Remote device is not on the Devices list, you need to add it.

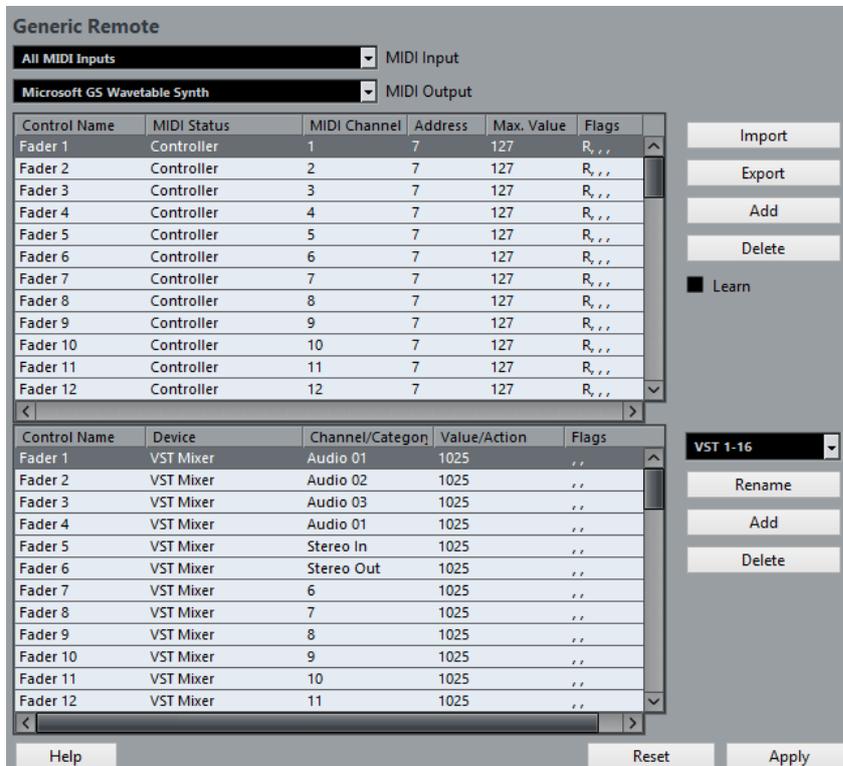
2. Click the "+" sign in the top left corner and select the "Generic Remote" device from the pop-up menu.

When the Generic Remote device is added in the Device Setup dialog, you can open the corresponding window by selecting "Generic Remote" from the Devices menu.



3. Select the Generic Remote device in the Devices list to the left.

The settings for the Generic Remote device are displayed, allowing you to specify which control on your device should control which parameter in Cubase.



4. Use the MIDI Input and Output pop-up menus to select the MIDI port(s) to which your remote device is connected.

5. Use the pop-up menu to the right to select a bank.

Banks are combinations of a certain number of channels, and are used because most MIDI devices can control only a limited number of channels at a time (often 8 or 16). For example, if your MIDI control device has 16 volume faders, and you are using 32 MixConsole channels in Cubase, you would need 2 banks of 16 channels each. When the first bank is selected you can control channel 1 to 16; when the second Bank is selected you can control channel 17 to 32.

6. Set up the table at the top according to the controls on your MIDI control device.

The columns have the following functionality:

Column	Description
Control Name	Double-clicking this field allows you to enter a descriptive name for the control (typically a name written on the console). This name is automatically reflected in the Control Name column in the lower table.
MIDI Status	Clicking in this column opens a pop-up menu, allowing you to specify the type of MIDI message sent by the control (e. g. Controller, Prog. Change Trigger). The NRPN and RPN controllers are part of the MIDI specification and present a way to extend the available control messages. The "Ctrl JLCoooper" option is a special version of a Continuous Controller where the 3rd byte of a MIDI message is used as address instead of the 2nd byte (a method supported by various JL-Cooper remote devices). For a description of the Ctrl-Houston status value, see the Steinberg Houston hardware manual.
MIDI Channel	Clicking in this column opens a pop-up menu, allowing you to select the MIDI channel on which the controller is transmitted.
Address	The Continuous Controller number, the pitch of a note, or the address of a NRPN/ RPN Continuous Controller.
Max. Value	The maximum value the control will transmit. This value is used by the program to "scale" the value range of the MIDI controller to the value range of the program parameter.
Flags	Clicking in this column opens a pop-up menu, allowing you to activate or deactivate flags: <ul style="list-style-type: none"> • Receive – activate this if the MIDI message should be processed on reception. • Transmit – activate this if a MIDI message should be transmitted when the corresponding value in the program changes. • Relative – activate this if the control is an "endless" rotary encoder, which reports the number of turns instead of an absolute value.

- If you find that the table at the top holds too many or too few controls, you can add or remove controls with the Add and Delete buttons to the right of the table.
- If you are uncertain of which MIDI message a certain controller sends, you can use the Learn function.

Select the control in the upper table (by clicking in the Control Name column), move the corresponding control on your MIDI device and click the Learn button to the right of the table. The MIDI Status, MIDI Channel, and Address values are automatically set to those of the moved control.

- If you use the Learn function for a control that sends a Program Change value, the “Prog. Change Trigger” option is automatically selected on the “MIDI Status” pop-up menu. This allows you to use the different values of a Program Change parameter to control different parameters in Cubase.

If this does not give you the result you want, try using the “Prog. Change” value instead.

7. Use the table at the bottom to specify which Cubase parameters you want to control. Each row in the table is associated to the controller in the corresponding row in the first table (as indicated by the Control Name column). The other columns have the following functionality:

Column	Description
Device	Clicking in this column opens a pop-up menu, used for determining which device in Cubase is controlled. The special “Command” option allows you to perform certain command actions by remote control. One example of this is the selection of remote banks.
Channel/Category	This is where you select the channel to be controlled or, if the “Command” Device option is selected, the Command category.
Value/Action	Clicking in this column opens a pop-up menu, allowing you to select the parameter of the channel to be controlled (typically, if the “VST Mixer” Device option is selected, you can choose between volume, pan, send levels, EQ, etc.). If the “Command” Device option is selected, this is where you specify the “Action” of the category.
Value/Action	Clicking in this column opens a pop-up menu, allowing you to select the parameter of the channel to be controlled (typically, if the “VST Mixer” Device option is selected, you can choose between volume, pan, send levels, EQ, etc.).
Flags	Clicking in this column opens a pop-up menu, allowing you to activate or deactivate flags: <ul style="list-style-type: none"> • Push Button – If this flag is activated, the parameter is only changed if the received MIDI message shows a value unequal to 0. • Toggle – If this flag is activated, the parameter value is switched between minimum and maximum value each time a MIDI message is received. The combination of

Column	Description
	<p>Push Button and Toggle is useful for remote controls which do not latch the state of a button. One example is controlling mute status with a device on which pressing the Mute button turns it on, and releasing the Mute button turns it off. If Push Button and Toggle are activated, the Mute status will change between on and off whenever the button is pressed on the console.</p> <ul style="list-style-type: none">• Not Automated – If this flag is activated, the parameter will not be automated.

8. If necessary, make settings for another bank.

NOTE

Note that you only need to make settings in the bottom table for this bank. The table at the top is already set up according to the MIDI remote device.

If necessary, you can add banks by clicking the Add button below the Bank pop-up menu. Clicking the Rename button allows you to assign a new name to the selected bank, and you can remove an unneeded bank by selecting it and clicking the Delete button.

9. When you are finished, close the Device Setup window.
Now, you can control the specified Cubase parameters from the MIDI remote device. To select another bank, use the pop-up menu in the Generic Remote window (or use a control on the MIDI remote device if you have assigned one for this).

Importing and exporting remote setups

The Export button in the top right corner of the Generic Remote Setup window allows you to export the current setup, including the Control configuration (the table at the top) and all banks. The setup is saved as a file (with the file extension ".xml"). Clicking the Import button allows you to import saved remote setup files.

NOTE

The last imported or exported remote setup will automatically be loaded when the program starts or the Generic Remote control is added in the Device Setup dialog.

Track Quick Controls

If you have an external remote control device, you can set it up to control up to 8 parameters of each audio track, MIDI track or instrument track, using the Track Quick Controls feature in Cubase.

RELATED LINKS

[Connecting Quick Controls with Remote Controllers](#) on page 608

The Remote Control Editor

Often, the automatic mapping of plug-in parameters to remote control devices appears rather random, and not very intuitive. The Remote Control Editor allows you to define your own mapping of VST plug-in parameters to the controls of the supported hardware controllers.

- To open the Remote Control Editor, right-click the plug-in panel of the plug-in that you want to remote-control and select "Remote Control Editor".



Layout Section

The main area of the editor is the Layout section. Layouts represent the hardware devices that are used to remote-control the plug-in parameters. Like these devices, a layout can have a number of pages. These pages contain a number of cells, which in turn contain controls. The available controls are 1 text label, 1 knob, and 2 switches.



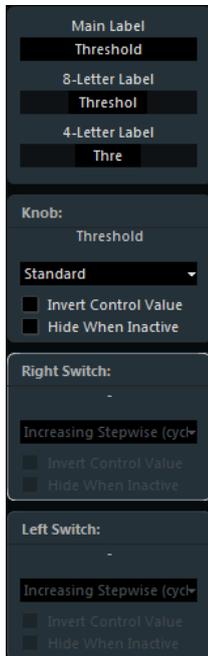
You can perform the following editing operations:

- Change the parameter assignments
- Change the name in the text label
- Set up the cells
- Arrange the order of cells and pages

When you open the editor for the first time, the Standard Layout is shown.

Inspector Section

The Inspector contains the settings and the parameter assignment for the selected cell. The upper section contains settings for the text label. The lower section contains settings for the knob and the switches.

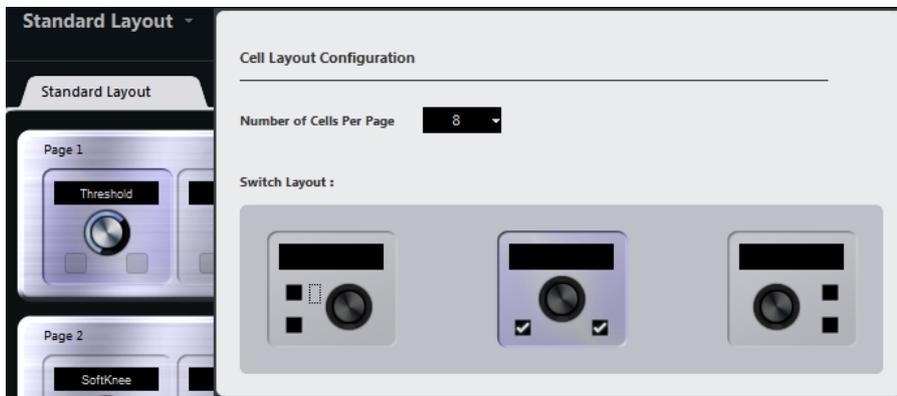


Status Bar

When you position the mouse pointer over an element in the editor window, the status bar shows information on what you can do with this element.



Setting up the Standard Layout



Click the “Set up Cell Layout” button to open the Cell Layout Configuration panel. Here, you can make the following settings:

- Use the pop-up menu to specify the number of cells per page.
- In the lower section, select the switch layout that you want to use for the pages.
You can specify the number of switches for a cell by activating/deactivating them.

Defining the Controls

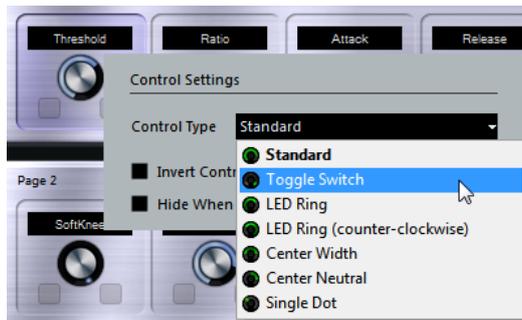
You can define the operation for a particular switch or knob. This includes changing the LED ring or changing its behaviour, from continuous value representation to on/off, for example.

Right-click the control and select a new control style in the settings window or select the control and select a style in the inspector.

NOTE

- To be able to make settings for a control, it has to be assigned to a function.
 - Not all hardware devices support all control type settings.
-

Control Type Settings for Knobs



The following control types are available for knobs:

Standard

A standard knob with undefined LED style.

Toggle Switch

This is best used for parameters with 2 states, like On/Off buttons.

LED Ring

An LED ring is shown around the knob. The setting increases clockwise.

LED Ring (counter-clockwise)

An LED ring is shown around the knob. The setting increases counter-clockwise from right to left.

Center Width

The LED ring starts at the top center position and when the settings increase, an LED is shown growing in both directions.

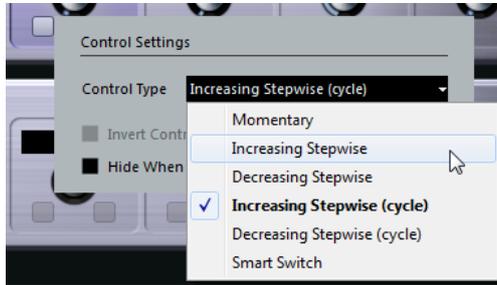
Center Neutral

The dial starts at the top center position and can be moved left or right, like a pan control, for example.

Single Dot

As "LED Ring", but showing only a dot to indicate the current value.

Control Type Settings for Switches



The following options are available for switches:

Momentary

The assigned function is active for as long as you keep the switch pressed.

Increasing Stepwise

Pressing the switch steps through the available settings until the maximum is reached.

Decreasing Stepwise

Pressing the switch steps through the available settings in reverse order until the minimum is reached.

Increasing Stepwise (cycle)

Pressing the switch steps through the available settings, starting over with the minimum value when the maximum is reached.

Decreasing Stepwise (cycle)

Pressing the switch steps through the available settings in reverse order, starting over with the maximum value when the minimum is reached.

Smart Switch

This changes between 2 states every time you press the switch, like an On/Off button. Furthermore, if you keep the switch pressed, you enter Momentary mode, that is, the corresponding function stays active for as long as the button is pressed.

Invert Control Value

This inverts the control state/value.

Hide Control When Inactive

Hides plug-in parameters when they are inactive or disabled.

Assigning Parameters to Controls

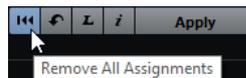
PROCEDURE

1. Click  on the toolbar to activate Learn mode for the editor.
2. In the editor, select the control that you want to assign to a plug-in parameter. A colored border around a control shows that this control has the Learn focus.

3. Click on a parameter on the plug-in panel.
This assigns that parameter to the control.
You can also double-click on a control in the editor to open the list of available plug-in parameters, and click a parameter to assign it to the control.
4. Click on another control to set the Learn focus to that control and assign a parameter to it.
5. Press **Esc** to end Learn mode.

Removing the Parameter assignment

- To remove the parameter assignment for a cell, activate Learn mode, select the cell, and press **Delete** or **Backspace**.
- To remove all assignments, click the “Remove All Assignments” button.



Assignment Status

You can show the current assignment of all cells in a layout by activating the “i” button in the top right corner of the editor. This is useful to get a quick overview of the parameters that are assigned to the available controls.



Editing the Layout

In the Layout section, you can perform a number of editing operations and arrange the pages to your liking.

Making Name Settings for the Cells

The top 3 text fields in the Inspector can be used to specify the names for a cell.

This is useful if you are working with hardware devices that have value fields that only display a limited number of characters, for example. The first text field shows the long name, as it is shown in the cell. In the second field, you can enter a name that can contain up to 8 characters, and up to 4 characters in the third.

Rearranging the Order of a Page or a Cell

- To copy the settings of one cell to another, select a cell, press **Alt** and drag it to another cell.
- To move a cell, drag it to an empty cell.

- To swap the contents of 2 cells, press **Ctrl/Cmd** and drag one cell to the other.

NOTE

Drag and drop also works between different pages.

Navigating

- You can use the cursor keys to navigate in all directions.
- When Learn mode is active, pressing **Shift** allows you to step between the controls within the cells.
- To step forwards or backwards through the different layouts, use **Tab** and **Shift-Tab**.

Adding/Removing Pages

- To add a page to a layout, click the “+” button on the right of a page.
- To remove a page, click the corresponding “-” button.

NOTE

A layout always contains at least one page.

Adding/Removing a New Hardware Layout

- To add a hardware layout for a particular hardware type, click the “+” button to the right of the tabs.
- To remove a hardware layout, click the “x” icon of a tab.

Changing the Settings in a Layout

- To modify an existing layout, save the new settings by clicking the Apply button in the top right corner of the editor.
If the hardware supports this function, the changes are immediately reflected on the hardware controllers.

Resetting the Layout and Copying Layout Settings between Pages

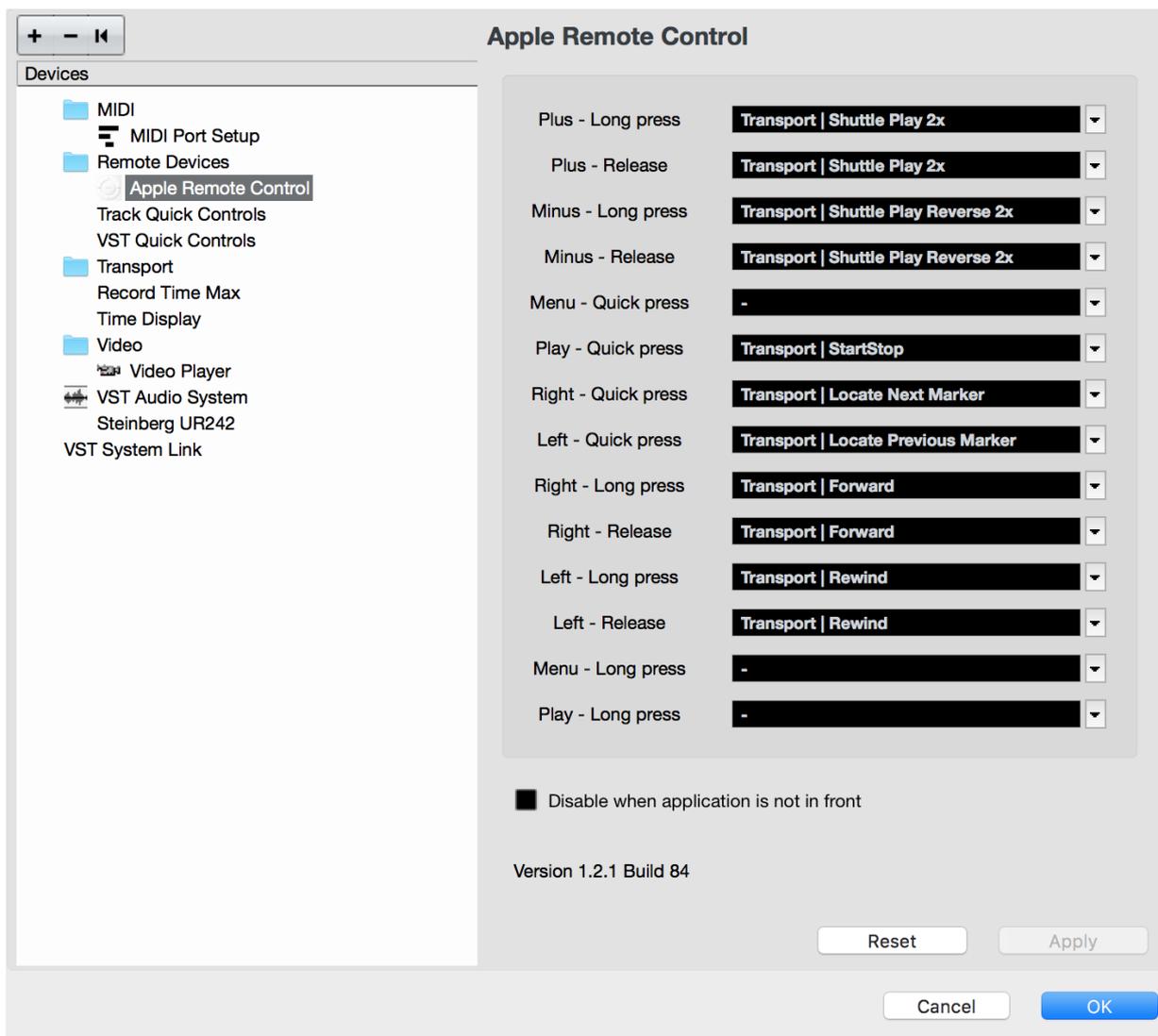
Click  in the top right corner of the editor to revert to the default settings for the current layout or to copy the settings of one layout page to another.

Apple Remote (Macintosh only)

Many Apple computers come with an Apple Remote Control, a small hand-held device akin to TV remote controls. It allows you to remotely control certain features in Cubase.

PROCEDURE

1. Open the Device Setup dialog and select Apple Remote Control from the Add Device pop-up menu.
2. In the list on the right, the Apple Remote’s buttons are listed. For each button you can open a pop-up menu from which you can select a Cubase parameter.
The parameter you select is assigned to the corresponding button on the Apple Remote.



By default, the Apple Remote always controls the application that has the focus on your Macintosh computer (provided that this application supports the Apple Remote).

NOTE

When the "Disable when application is not in front" option is not selected, the Apple Remote will control Cubase even if it does not have the focus.

MIDI Realtime Parameters and MIDI Effects

MIDI realtime means that you can change or transform MIDI events on MIDI or instrument tracks before they are sent to the MIDI outputs. This allows you to change the way MIDI data is played back.

The actual MIDI events on the track are not affected. Therefore, MIDI realtime changes are not reflected in any MIDI editor.

The following functions allow you to change MIDI events in realtime:

- MIDI track parameters
- MIDI modifiers
- MIDI effects
- Transpose and Velocity on the info line

NOTE

If you want to convert the track settings to real MIDI events, select **MIDI > Freeze MIDI Modifiers** or **MIDI > Merge MIDI in Loop**.

RELATED LINKS

[Making your settings permanent](#) on page 662

MIDI Track Parameters

The MIDI track parameters are located in the topmost Inspector section for MIDI and instrument tracks.

These settings either affect the basic functionality for the track (mute, solo, enable record, etc.) or send out additional MIDI data to the connected devices (program change, volume, etc.).

The following track parameters allow you to change MIDI events in realtime:

- MIDI Volume
- MIDI Pan
- Track Delay
- Input Transformer

RELATED LINKS

[MIDI Track Inspector](#) on page 115

[Input Transformer](#) on page 638

Input Transformer

The **Input Transformer** allows you to filter out and change MIDI data coming to a MIDI track before it is recorded.

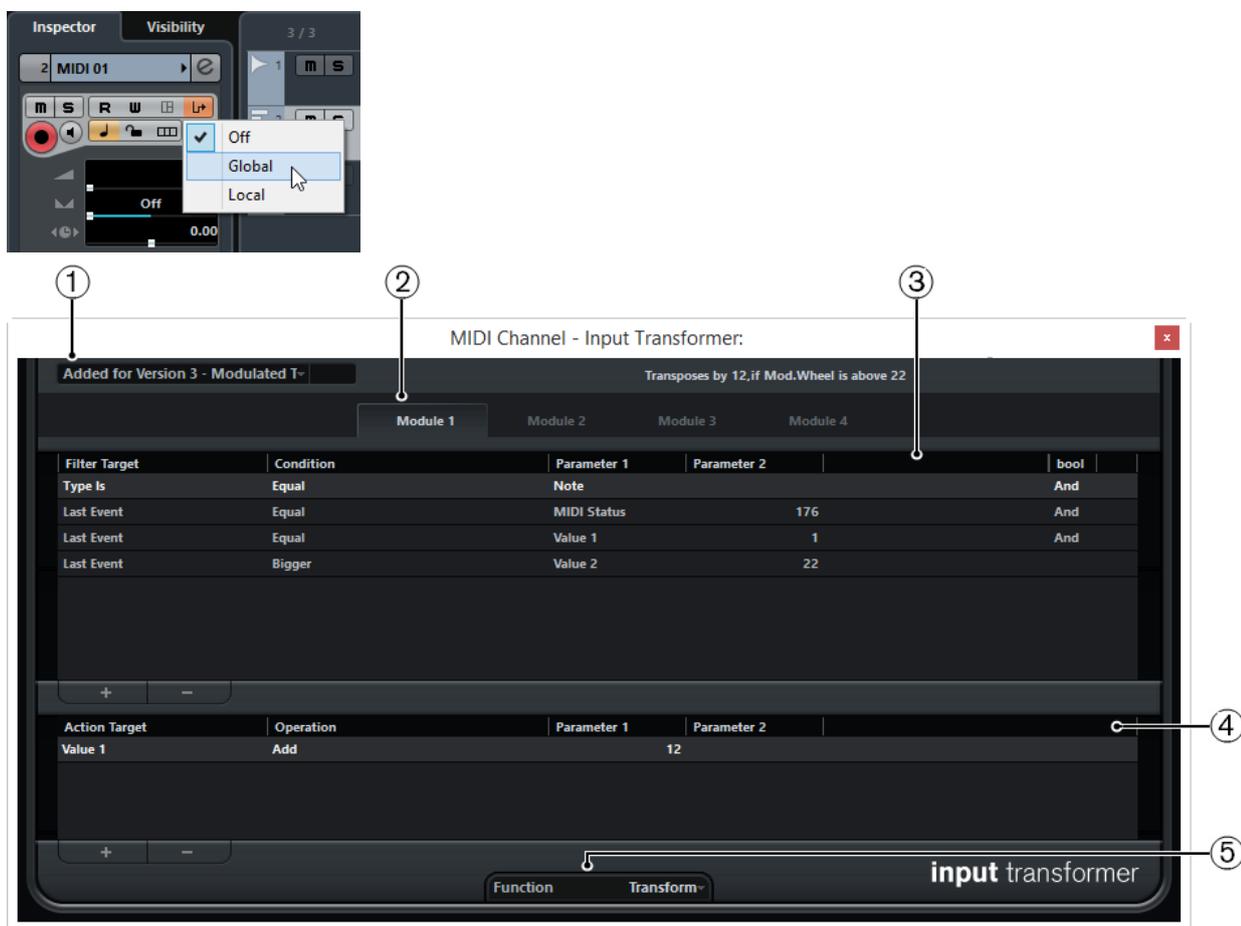
Use the **Input Transformer** for the following purposes:

- Set up split keyboard combinations for recording left and right hands separately.
- Convert a controller like a foot pedal into MIDI notes (for playing bass drum the right way).
- Filter out a specific type of MIDI data on one MIDI channel only.
- Turn aftertouch into any controller and vice versa.
- Invert velocity or pitch.

Input Transformer Window

To open the **Input Transformer** window, perform one of the following actions:

- Select a MIDI or instrument track, click **Input Transformer** , and select **Global**. This allows you to make settings that affect all MIDI inputs and all MIDI tracks.
- Select a MIDI or instrument track, click **Input Transformer**, and select **Local**. This allows you to make settings for the selected track only.



The **Input Transformer** window contains the following parameters:

1. **Select Preset**
Allows you to select a preset for the **Input Transformer**.
2. **Module selector**
Allows you to view and edit a module.
3. **Filter conditions list**
Allows you to set up the filter conditions, determining which elements to find. The list can contain one or several conditions, each on a separate line.
4. **Action list**

Allows you to specify any changes that are made to the found events.

5. Function pop-up menu

Allows you to select between **Filter** and **Transform** as a basic type of editing to be performed.

Specifying Filter Conditions

PROCEDURE

1. Select a MIDI or instrument track.
2. Perform one of the following actions:
 - To make settings that affect all MIDI tracks, open the Inspector, click **Input Transformer**, and select **Global** from the pop-up menu.
 - To make settings that affect the selected MIDI track, open the Inspector, click **Input Transformer**, and select **Local** from the pop-up menu.
3. Open the **Function** pop-up menu, and perform one of the following actions:
 - Select **Filter** if you want to filter the found events.
 - Select **Transform** if you want to transform the found events.
4. Click + to add a line to the filter conditions list.
5. In the filter conditions list, specify the conditions to match by clicking the **Filter Target**, **Condition**, and **Parameter** columns and selecting options from the pop-up menu.
6. In the action list, specify how the found events are transformed or filtered by clicking the **Action Target**, **Operation**, and **Parameter** columns and selecting options from the pop-up menu.

NOTE

You can also select a preset from the **Select Preset** pop-up menu to specify conditions and actions.

RESULT

The settings affect all MIDI events that you record on the track.

AFTER COMPLETING THIS TASK

In the Inspector, click **Input Transformer**, and select **Off**. Otherwise the **Input Transformer** is still active.

MIDI Modifiers

MIDI modifiers allow you to modify MIDI events during playback.

You can use them for the following purposes:

- To modify already existing MIDI events on MIDI or instrument tracks.
- To modify MIDI events that you play live.

NOTE

For live playing, select and record-enable the track, and activate **MIDI Thru Active** in the **Preferences** dialog, **MIDI** page.

MIDI Modifiers Section



NOTE

If you want to compare the result of your modifier settings with the unprocessed MIDI, you can use the bypass button in the MIDI modifiers section. If this button is activated, the MIDI modifiers settings are temporarily disabled.



Transpose

Allows you to transpose all notes on the track in semitones. Extreme transpositions can give rather strange and unwanted results.

Velocity Shift

Allows you to add a velocity value to all notes on the track. Positive values increase the velocity while negative values lower the velocity.

Velocity Compression

Allows you to add a multiplier to the velocity of all notes on the track. The value is set with a numerator, and a denominator. This parameter also affects the velocity differences between the notes, thus compressing or expanding the velocity scale.

Values smaller than 1/1 compress the velocity range. Values greater than 1/1 together with negative **Velocity Shift** values expand the velocity range.

IMPORTANT

Remember that the maximum velocity is always 127 no matter how much you try to expand.

NOTE

Combine this setting with the **Velocity Shift** parameter.

Length Compression

Allows you to add a multiplier to the length of all notes on the track. The value is set with a numerator and a denominator.

Random

Allows you to introduce random variations to various properties of MIDI notes.

Range

Allows you to specify a pitch or velocity range and either force all notes to fit within this range, or exclude all notes outside this range from playback.

HMT: Follow

Activate this button to apply Hermode tuning to the notes played on this track.

HMT: Use for Analysis

Activate this option to use the notes you played on this track to calculate retuning.

Setting up Random Variations

You can set up random variations for position, pitch, velocity, and length of MIDI events using one or two random generators.

PROCEDURE

1. Select a MIDI or instrument track.
2. In the Inspector, open the **MIDI Modifiers** section.
3. Open the **Random** pop-up menu, and select the note property you want to randomize.
4. Specify the limits of the randomization in the two number fields.
The values will vary between the left value and the right value. You cannot set the left value higher than the right value.
5. Play back the track to hear the randomized events.

RESULT

The corresponding properties are randomized.

NOTE

Depending on the track content, certain changes might not be immediately noticeable or might have no effect at all.

AFTER COMPLETING THIS TASK

Deactivate the random function by opening the **Random** pop-up menu and selecting **OFF**.

Setting up Ranges

You can filter out pitches or velocities that do not match a specified range, or force them to fit a specified range.

PROCEDURE

1. Select a MIDI or instrument track.
2. In the Inspector, open the **MIDI Modifiers** section.
3. Open the **Range** pop-up menu, and select a mode.
4. Set the minimum and maximum values with the two fields to the right.

NOTE

You can make independent settings for the two Range functions.

AFTER COMPLETING THIS TASK

To deactivate the function, open the **Range** pop-up menu and select **OFF**.

Range Modes

On the **Range** pop-up menu, you can select different range modes. Values are shown as numbers, from 0 to 127, for the velocity modes and as note numbers, from C-2 to G8, for the pitch modes.

Vel. Limit

Allows you to force all velocity values to fit within the range that you specify with the **min** and **max** values. Values below the lower limit are set to the **min** value, velocity values above the higher setting are set to the **max** value.

Vel. Filter

Allows you to filter out notes with velocity values below the **min** value or above the **max** value.

Note Limit

Allows you to transpose all notes below the **min** value upwards and all notes above the **max** value downwards in octave steps.

Note Filter

Allows you to filter out notes that are lower than the **min** value or higher than the **max** value.

Applying Hermode Tuning

Hermode Tuning retunes the notes you play and creates clear frequencies for every fifth and third interval, for example. Retuning only affects individual notes and maintains the pitch relationship between keys and notes. The retuning is a continuous process and takes the musical context into account.

PROCEDURE

1. Select a MIDI or instrument track.
2. In the Inspector, open the **MIDI Modifiers** section.
3. Activate **HMT: Follow**.
4. Activate **HMT: Use for Analysis** to use the notes you play to calculate retuning.

NOTE

If you use tracks with acoustic piano, activate **HMT: Use for Analysis** and deactivate **HMT: Follow**. This excludes the piano from being tuned which would sound unnatural.

5. Select **Project > Project Setup** to open the **Project Setup** dialog.
6. Open the **HMT Type** pop-up menu and select one of the options.
7. Play some notes.
It may take a moment until all notes are recalculated and you hear the results of the retuning.

NOTE

Notes that are produced by MIDI plug-ins are not taken into account.

RESULT

If you use a VST 3 instrument that supports Micro Tuning and Note Expression, notes are retuned dynamically while you play them. For VST instruments that support Note Expression, this also works in **MIDI Thru** mode.

If you use a track that has a VST 2 instrument loaded, the notes you play are retuned on every keystroke.

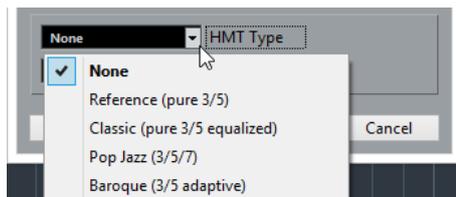
RELATED LINKS

[Hermodé Tuning](#) on page 644

Hermodé Tuning

You can select different Hermodé tuning types.

- To select a Hermodé Tuning type, select **Project > Project Setup** and select an option from the **HMT Type** pop-up menu.



The following options are available:

None

No tuning is applied.

Reference (pure 3/5)

Tunes pure thirds and fifths.

Classic (pure 3/5 equalized)

Tunes pure thirds and fifths. In conflict situations, a slight equalization is applied. This tuning type is suitable for all kinds of music.

Pop Jazz (3/5/7)

Tunes pure thirds and fifths, and natural sevenths. This tuning type should not be applied to polyphonic music. Try this with pop or jazz.

Baroque (3/5 adaptive)

Tunes pure thirds and fifths. The degree of purity changes according to the sequence of harmonies. This tuning type is suitable for church organ and polyphonic music.

MIDI Effects

MIDI effects allow you to transform the MIDI data played back from the track in realtime.

You can add new events by using MIDI effects, or change MIDI event properties like pitches, for example.

NOTE

The included MIDI effect plug-ins are described in the separate PDF document **Plug-in Reference**.

MIDI Inserts

MIDI insert effects are inserted in the signal chain of MIDI channels. If you add an insert effect to a MIDI track, the MIDI events on the track are sent to the effect and processed by it. The whole signal passes through the effect.

- To add a MIDI insert effect, open the **MIDI Inserts** section of the MIDI track Inspector.



You can add up to four MIDI insert effects. The following parameters are available:

Bypass

Allows you to bypass all insert effects for the track.

Activate Insert

Allows you to activate/deactivate the selected effect.

Open/Close Insert Effect Editor

Allows you to open/close the control panel for the selected effect. Depending on the effect, this may appear in a separate window or below the insert slot in the Inspector.

Select Effect Type

Allows you to select and activate an effect and open its control panel. To remove an effect, select **No Effect**.

Record Output to Track

Allows you to record the output of the MIDI insert effect on a MIDI or instrument track.

NOTE

To open a separate control panel for effects that display their controls in the Inspector, press **Alt** and click **Open/Close Insert Effect Editor**.

Applying a MIDI Insert Effect

You can apply MIDI insert effects to a MIDI track.

PROCEDURE

1. Select the MIDI track.
 2. In the Inspector, open the **MIDI Inserts** section.
 3. Click **Select Effect Type** to open the MIDI effect pop-up menu.
 4. Select a MIDI effect from the pop-up menu.
-

RESULT

The effect is automatically activated, and its control panel is opened allowing you to make settings for the effect. All MIDI from the track is routed through the effect.

NOTE

The included MIDI effects are described in the separate PDF document **Plug-in Reference**.

Recording a MIDI Insert Effect

You can record the output of a MIDI insert effect, that is, the events are created directly on a MIDI or instrument track.

PROCEDURE

1. Select **Project > Add Track > Instrument**.
2. In the **Add Instrument Track** dialog, select a VST instrument.
3. On the Instrument track, activate **Record Enable**.
4. In the Inspector, open the **MIDI Inserts** section.
5. Click the first insert effect slot and select a MIDI insert effect.
6. Activate **Record Output to Track**.



7. On the **Transport** panel, activate **Record** and use your MIDI keyboard or the virtual keyboard to play some notes.

RESULT

The notes that you play are modified by the MIDI insert effect and recorded directly on the track.

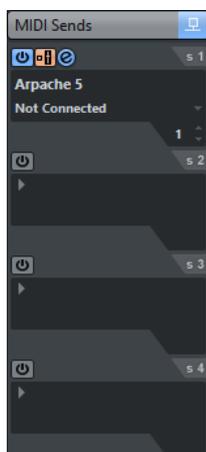
AFTER COMPLETING THIS TASK

You can edit the recorded MIDI events, in the **Key Editor**, for example.

MIDI Sends

If you use a send effect, the MIDI events are sent both to the output of the MIDI track and to the send effect. This way, you get both the unprocessed MIDI events and the output of the MIDI effect. Note that the effect can send its processed MIDI data to any MIDI output, not necessarily to the one used by the track.

- To add a MIDI send effect, open the **MIDI Sends** section of the MIDI track Inspector.



You can add up to four MIDI send effects.

Bypass

Allows you to bypass all send effects for the track.

Activate Send

Allows you to activate/deactivate the selected effect.

Pre/Post

Activate this to send the MIDI signals to the send effects before the MIDI modifiers and insert effects.

Open/Close Send Effect Editor

Allows you to open/close the control panel for the selected effect. Depending on the effect, this may appear in a separate window or below the sends slot in the Inspector.

Select Effect Type

Allows you to select and activate an effect and open its control panel. To remove an effect, select **No Effect**.

MIDI Send Destination

Allows you to determine to which MIDI output the processed MIDI events are sent.

MIDI Send Channel

Allows you to determine on which MIDI channel the processed MIDI events are sent.

NOTE

To open a separate control panel for effects that display their controls in the Inspector, press **Alt** and click **Open/Close Send Effect Editor**.

About Presets

Some of the MIDI effects come with a number of presets for instant use.



- 1. MIDI In/MIDI Out Activity**
Indicates if the plug-in receives or transmits MIDI data.
- 2. Save Preset/Remove Preset**

Allows you to save your settings as a preset or to remove saved presets. Saved presets are available in the **Select Preset** pop-up menu for all instances of that MIDI plug-in, and in all projects.

Transpose and Velocity on the Info Line

You can edit the transposition and the velocity for selected MIDI parts on the info line. This only affects the notes on playback.

- Use the **Transpose** field to transpose the selected parts in semitone steps. The value is added to the transposition set for the whole track.
- Use the **Velocity Offset** field to offset the velocity for the selected parts. The value is added to the velocities of the notes in the parts.

RELATED LINKS

[Transpose Functions](#) on page 277

Using MIDI devices

The MIDI Device Manager allows you to specify and set up your MIDI devices, making global control and patch selection easy.

But the MIDI Device Manager also features powerful editing functions that can be used to create MIDI device panels (Cubase Pro only). MIDI device panels are internal representations of external MIDI hardware, complete with graphics. The MIDI device panel editor provides all the tools you need to create device maps where every parameter of an external device (and even an internal device like a VST instrument) can be controlled and automated from inside Cubase.

For additional information on how to create panels for VST instruments, see the separate PDF document **MIDI Devices**.

RELATED LINKS

[About Device panels \(Cubase Pro only\)](#) on page 657

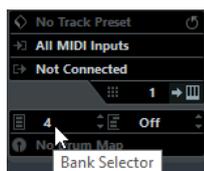
MIDI devices – general settings and patch handling

On the following pages, we will describe how to install and set up preset MIDI devices, and how to select patches by name from within Cubase. For a description on how to create a MIDI device from scratch, please see the separate PDF document **MIDI Devices**.

About Program Change and Bank Select

To instruct a MIDI instrument to select a certain patch (sound), you send a MIDI Program Change message to the instrument. Program Change messages can be recorded or entered in a MIDI part like other events, but you can also enter a value in the Program Selector field in the Inspector for a MIDI track. This way, you can quickly set each MIDI track to play a different sound.

With Program Change messages, you are able to select between 128 different patches in your MIDI device. However, many MIDI instruments contain a larger number of patch locations. To make these available from within Cubase, you need to use Bank Select messages, a system in which the programs in a MIDI instrument are divided into banks, each bank containing 128 programs. If your instruments support MIDI Bank Select, you can use the Bank Selector field in the Inspector to select a bank, and then the Program Selector field to select a program in this bank.

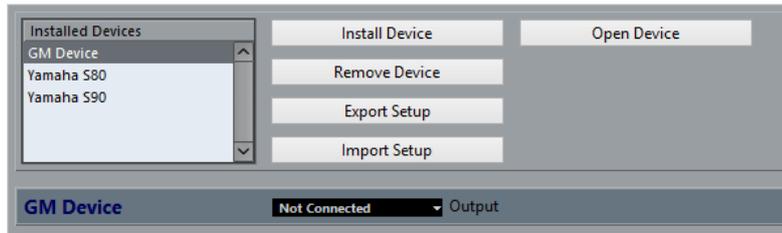


Unfortunately, different instrument manufacturers use different schemes for how Bank Select messages are constructed, which can lead to some confusion and make it hard to select the correct sound. Also, selecting patches by numbers this way seems unnecessarily cumbersome, when most instruments use names for their patches nowadays.

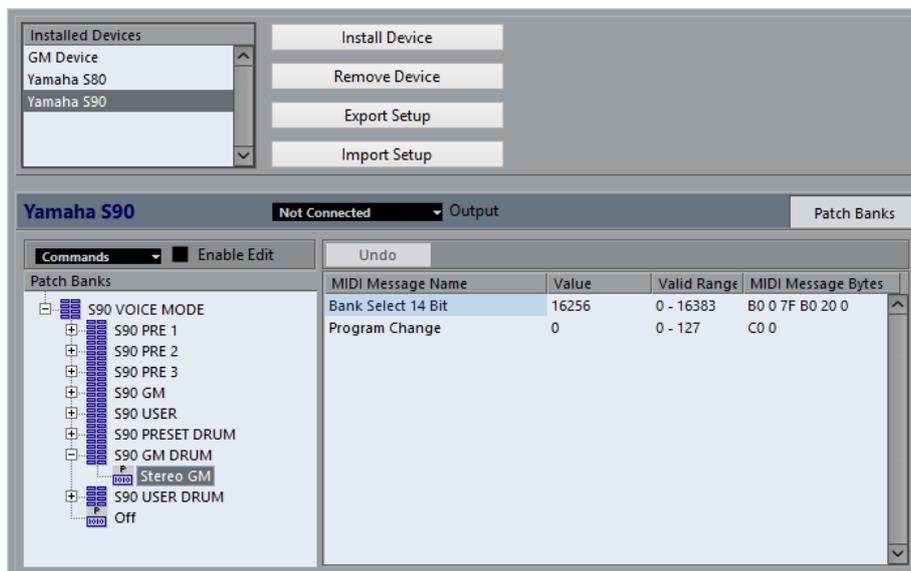
To help with this, you can use the MIDI Device Manager to specify which MIDI instruments you have connected by selecting from a vast list of existing devices or by specifying the details yourself. Once you have specified which MIDI devices you are using, you can select to which particular device each MIDI track is routed. It is then possible to select patches by name in the track list or Inspector.

Opening the MIDI Device Manager

Select MIDI Device Manager from the Devices menu to bring up the following window:



MIDI Device Manager dialog in Cubase Pro.



MIDI Device Manager dialog in Cubase Artist.

Installed Devices

List of connected MIDI devices. The first time you open the MIDI Device Manager, this list will be empty.

Install Device/Remove Device

Use these buttons to install/remove devices.

Export Setup/Import Setup

Use these buttons to import/export XML Device setups.

Open Device (Cubase Pro only)

This button opens the selected device.

Output

Here you specify to which MIDI output the selected device is connected.

Commands (Cubase Artist only)

This pop-up menu lets you edit the selected device (provided that “Enable Edit” is ticked). The patch structure for the selected device is shown on the left side of the dialog.

MIDI Messages (Cubase Artist only)

This area on the right side of the dialog shows exactly which MIDI messages are sent out to select the patch highlighted in the list to the left.

When you open the MIDI Device Manager for the first time, it will be empty (because you have not installed any devices yet). On the following pages we describe how to add a pre-configured MIDI device to the list, how to edit the settings and how to define a device from scratch.

Note that there is an important difference between installing a preset MIDI device (“Install Device”) and importing a MIDI device setup (“Import Setup”):

- The presets do not include any device mapping of parameters and controls and no graphic panels.
They are simply patch name scripts. When you install a preset MIDI device, it is added to the Installed Devices list. For more information about patch name scripts, see the separate PDF document **MIDI Devices**.
- A device setup can include device mapping, panels and/or patch information.
Device setups are also added to the list of installed devices when imported.

RELATED LINKS

[About Device panels \(Cubase Pro only\)](#) on page 657

Defining a new MIDI device (Cubase Pro only)

If your MIDI device is not included in the list of pre-configured devices (and is not a “plain” GM or XG device), you need to define it manually to make it possible to select patches by name. This is handled slightly differently for Cubase Pro and Cubase Artist.

PROCEDURE

1. In the MIDI Device Manager, click the Install Device button.
The Add MIDI Device dialog opens.
 2. Select “Define New...” and click OK.
The “Create New MIDI Device” dialog opens. For a description of the options in this dialog, see the separate PDF document **MIDI Devices**.
 3. In the Identical Channels list, activate the MIDI channels you would like the device to use.
This means that the device will receive Program Change over any MIDI channel. For a description of Identical and Individual Channels, see the separate PDF document **MIDI Devices**.
 4. Enter a name for the device at the top of the dialog, and click OK.
The device appears in the Installed Devices list, and the device node structure for the device is automatically shown in a new window.
 5. Select Patch Banks from the pop-up menu at the top of the window.
As you can see, the list is empty.
 6. Make sure that the Enable Edit checkbox is activated.
Now you can use the functions on the Commands pop-up menu on the left to organize the patch structure of the new device.
-

Defining a new MIDI device (Cubase Artist only)

If your MIDI device is not included in the list of pre-configured devices (and is not a “plain” GM or XG device), you need to define it manually to make it possible to select patches by name.

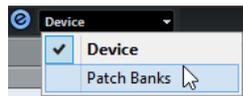
PROCEDURE

1. In the MIDI Device Manager, click the Install Device button.
The Add MIDI Device dialog opens.
 2. Select “Define New...” and click OK.
A dialog appears.
 3. Enter the name of the device and the MIDI channels you would like the device to use and click OK.
The device appears in the Installed Devices list.
 4. Select the device in the list.
As you can see, it contains only an Empty Bank item.
 5. Make sure that the Enable Edit checkbox is activated.
Now you can use the functions on the Commands pop-up menu on the left to organize the patch structure of the new device.
-

Installing a preset MIDI device

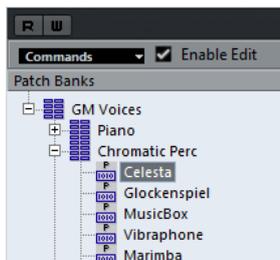
PROCEDURE

1. Click the Install Device button.
A dialog opens listing all pre-configured MIDI devices. For now we assume that your MIDI device is included in this list.
2. Locate and select the device in the list and click OK.
If your MIDI device is not included in the list but is compatible with the GM (General MIDI) or XG standards, you can select the generic GM or XG Device options at the top of the list.
When you select one of these options, a name dialog will appear. Enter a name for the instrument and click OK.
The device now appears in the Installed Devices list to the left.
3. Make sure that the new device is selected in the list and open the Output pop-up menu.
4. Select the MIDI output that the device is connected to.
5. If you are using Cubase, click the Open Device button.
A separate window opens for the selected device, showing a node structure in the left half of the window. At the top of this structure is the device itself, and below it the MIDI channels used by the device. For more information about the Device window, see the separate PDF document **MIDI Devices**.
6. Select Patch Banks from the pop-up menu at the top of the window.



RESULT

The Patch Banks list in the left half of the window shows the patch structure of the device. This could simply be a list of patches, but it is usually one or several layers of banks or groups containing the patches (much like a folder structure on a hard disk for example).



- You can rename a device in the Installed Devices list by double-clicking and typing – this is useful if you have several devices of the same model, and want to separate them by name instead of by number.
- To remove a device from the Installed Devices list, select it and click Remove Device.

NOTE

Note that if there already exists a panel for the device (Cubase Pro only), opening the device might open this panel first. In this case, click on the Edit (“e”) button to open the Device window.

About Patch Banks

Depending on the selected device, you may find that the Patch Banks list is divided in two or more main banks. Typically, these are called Patches, Performances, Drums, etc. The reason for having several patch banks is that different “types” of patches are handled differently in the instruments. For example, while “patches” typically are “regular” programs that you play one at the time, “performances” may be combinations of programs, which could be split across the keyboard, layered, or used for multi-timbral playback, and so on.

Cubase Pro only: For devices with several banks, you will find an additional item labeled “Bank Assignment” in the pop-up menu at the top of the window. Selecting this opens a window in which you can specify for each MIDI channel which bank it should use.



Cubase Artist only: Devices with several banks have an additional tab “Bank Assignment”. Select this tab to specify for each MIDI channel which bank it should use.



The selection here will affect which bank is displayed when you select programs by name for the device in the track list or Inspector. For example, many instruments use MIDI channel 10 as an exclusive drum channel, in which case you would want to select the “Drums” (or “Rhythm Set”, “Percussion”, etc.) bank for channel 10 in this list. This would then let you choose between different drum kits in the track list or Inspector.

Limitations

There is no easy way to import a patch name script into an existing MIDI device. For a complex workaround based on XML editing, see the separate PDF document **MIDI Devices**.

Selecting a patch for an installed device

If you return to the Project window at this point, you will find that the installed device has been added to the MIDI Output menus (in the track list and the Inspector). Now you can select patches by name, in the following way:

PROCEDURE

1. Open the Output menu (in the track list or Inspector) for the track you want to associate the installed device with, and select the device.

This directs the track to the MIDI output specified for the device in the MIDI Device Manager. The Bank and Program Selector fields in the track list and Inspector are replaced by a single Program Selector field that reads “Off”.

2. Click the Program Selector field to display a pop-up menu, hierarchically listing all the patches in the device.

The list is similar to the one displayed in the MIDI Device Manager. You can scroll the list up and down (if required), click the plus/minus signs to show or hide subgroups, etc.



You can also use a filter function here. For this, enter the search term in the Filter field, e.g. “drum”, and press **Return** to display all sounds with “drum” in the name.

3. Click a patch in the list to select it.
This sends the appropriate MIDI message to the device. You can also scroll the program selection up or down, as with any value.
-

Renaming patches in a device

The pre-configured devices list is based on the factory-preset patches, i. e. the patches included in the device when you first bought it. If you have replaced some of the factory presets with your own patches, you need to modify the device so that the patch name list matches the actual device:

PROCEDURE

1. In the MIDI Device Manager, select the device in the Installed Devices list.
2. If you are using Cubase, click Open Device.
Make sure that Patch Banks is selected on the pop-up menu at the top of the window.
3. Activate the Enable Edit checkbox.
When this is turned off (default), you cannot edit the pre-configured devices.
4. In the Patch Banks list, locate and select the patch you want to rename.
In many instruments, the user-editable patches are located in a separate group or bank.
5. Click on the selected patch in the Patch Banks list to edit its name.
6. Type in the new name and press **Return**.
7. Rename the desired patches in this way, and finish by deactivating Enable Edit again (to avoid modifying the device by accident).

NOTE

You can also make more radical changes to the patch structure in a device (adding or deleting patches, groups or banks), see below. For example, this is useful if you expand your MIDI device by adding extra storage media such as RAM cards.

Patch Structure

Patches are structured as follows:

- Banks are the main categories of sounds – typically patches, performances and drums, as described above.
- Each bank can contain any number of groups, represented by folders in the list.
- The individual patches, performances or drum kits are represented by presets in the list.

The Commands pop-up menu contains the following items:

Create Bank

Creates a new bank at the highest hierarchical level of the Patch Banks list. You can rename this by clicking on it and typing a new name.

New Folder

Creates a new subfolder in the selected bank or folder. This could correspond to a group of patches in the MIDI device, or just be a way for you to categorize sounds, etc. When you select this item, a name dialog opens, allowing you to name the folder. You can also rename the folder afterwards by clicking it and typing in the list.

New Preset

This adds a new preset in the selected bank or folder.

You can rename the preset by clicking it and typing a new name.

When the preset is selected, the corresponding MIDI events (Program Change, Bank Select, etc.) are shown in the event display to the right. The default setting for a new preset is Program Change 0 – to change this, proceed as follows:

IMPORTANT

For details on which MIDI events are used for selecting patches in the MIDI device, consult its documentation.

- To change which Program Change value is sent out to select the patch, adjust the number in the Value column for the Program Change event.
- To add another MIDI event (e. g. Bank Select) click directly below the last event in the list and select a new event from the pop-up menu.
After adding a new event, you need to set its value in the Value column, as with Program Change.
- To replace an event, click on it and select another event from the pop-up menu.
For example, a MIDI device may require that a Bank Select message is sent first, followed by a Program Change message, in which case you would need to replace the default Program Change message with a Bank Select message and add a new Program Change after that.
- To remove an event, select it and press **Delete** or **Backspace**.

IMPORTANT

Different devices use different schemes for Bank Select. When you insert a Bank Select event, you should check the device's documentation to find out whether to choose "CC: BankSelect MSB", "Bank Select 14 Bit", "Bank Select 14 Bit MSB-LSB Swapped" or some other option.

Add Multiple Presets

This opens a dialog, allowing you to set up a range of presets to be added to the selected bank or folder.

Adding Multiple Presets

PROCEDURE

1. Add the event types required for selecting a patch in the MIDI device.

This is done just as when editing the settings for a single event: clicking in the event display brings up a pop-up menu from which you can select an event type.

2. Use the Range column to set up either a fixed value or a range of values for each event type in the list.

This requires some explanation:

If you specify a single value in the Range column (e. g. 3, 15 or 127), all added presets will have an event of this type set to the same value.

If you instead specify a value range (a start value and an end value, separated by a dash, e. g. 0-63), the first added preset will have an event set to the start value, the next value will be incrementally raised by one and so on, up to and including the end value.

MIDI Message Name	MIDI Message Bytes	Valid Range	Range
CC: Gen Purp 4	B0 13 0	0 - 127	0-127
Program Change	C0 0	0 - 127	7

NOTE

The number of added presets depends on the Range setting.

3. Specify a Default Name below the event display.
The added events will get this name, followed by a number. You can rename presets manually in the Patch Banks list later.
 4. Click OK.
A number of new presets have now been added to the selected bank or folder, according to your settings.
-

Other editing functions

- You can move presets between banks and folders by dragging them to the Patch Banks list.
- You can remove a bank, folder or preset by selecting it in the Patch Banks list and pressing **Backspace**.
- Cubase Pro only: If you specify more than one bank, a Bank Assignment item is added to the pop-up menu at the top of the window. Use this to assign banks to the different MIDI channels.
- Cubase Artist only: If you specify more than one bank, a Bank Assignment tab is added next to the Patch Banks tab.

RELATED LINKS

[About Patch Banks](#) on page 653

About Device panels (Cubase Pro only)

On the following pages we will describe how to use MIDI Device panels and the powerful MIDI device panel editing features of the MIDI Device Manager.

NOTE

We recommend that you first configure the patch banks, then export the device setup before editing the panels. This way, most of your settings will be saved in case of panel configuration problems.

The panels are saved in XML format. For more information, see the separate PDF document **MIDI Devices**.

Basic concept

The panel editing features in the MIDI Device Manager can be seen as a separate application or entity within Cubase. It allows you to build device maps complete with control panels, including all parameters controllable from within Cubase.

Building more complex device maps requires that you are familiar with SysEx programming (see the separate PDF document **MIDI Devices**). But you can also create simpler panels by assigning MIDI Control Change messages to control objects, which does not require any programming skills. Although these powerful editing features are there if you need them, you do not have to use them to use MIDI devices.

Device panels in the program

In this section we will take a look at a pre-configured MIDI device panel to illustrate how it can be used in Cubase. Several device maps can be found in the Knowledge Base on the Steinberg web site.

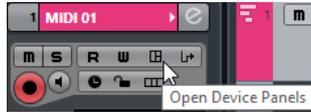
Opening a device setup

PROCEDURE

1. Open the MIDI Device Manager from the Devices menu.
 2. Click the "Import Setup" button.
A file dialog opens.
 3. Select a device setup file.
The Device setup files are saved in XML format, for more information see the separate PDF document **MIDI Devices**.
 4. Click Open. The Import MIDI Devices dialog opens where you can select one or several devices for import.
A device setup file can contain one or several MIDI devices.
 5. Select a device and click OK.
The device is added to the list of installed devices in the MIDI Device Manager.
 6. Select the correct MIDI output from the Output pop-up menu, select the device in the list and click the Open Device button.
The device panel opens in a separate window. The Edit ("e") button at the top opens the Edit Panel window, see the separate PDF document **MIDI Devices**.
 7. Close the Device panel and return to the Project window.
 8. Select the device from the "Output Routing" pop-up menu for a MIDI track.
Note that for some devices, you may have to set the MIDI channel to "Any".
-

RESULT

Now the Device panel can be opened by clicking the Open Device Panels button in the Inspector or in the channel for the corresponding track in the MixConsole.



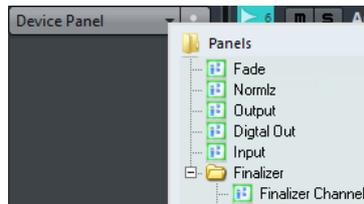
NOTE

Note that **Ctrl/Cmd**-clicking the Open Device Panels button allows you to open a subpanel via the panel browser pop-up menu.

Showing panels in the Inspector

PROCEDURE

1. In the Inspector, open the Device Panel section and click on the arrow on the right.
A "Panels" folder is shown with the selected device in a node structure below it. If you open all the folders, you can select any individual panel from the device that "fits" into the Device Panel space.



2. Select a panel from the list.
The panel opens in the Inspector.



NOTE

If you cannot see any panels in the "Panels" folder, although you have successfully set up a MIDI device with several panels, make sure that you selected the correct channel from the Channel pop-up menu, preferably "Any" to see all device panels. Also make sure that the panels fit into the space, otherwise they will not be available in the "Panels" folder.

Showing panels in the MixConsole

PROCEDURE

1. Open the MixConsole and click Racks to open the rack selector and activate the Device Panels rack.
2. Click the Panel header to expand the Device Panels rack.
3. Click the button at the right of the header.

The Panels folder is displayed like in the Inspector, but with different available panels. Just like in the Inspector, the panel has to “fit” into the available space to be selectable.

4. Select a panel.
The panel is shown in the Channel Racks section of the MixConsole.
-

Automating device parameters

Automation works just like for normal audio and MIDI tracks:

PROCEDURE

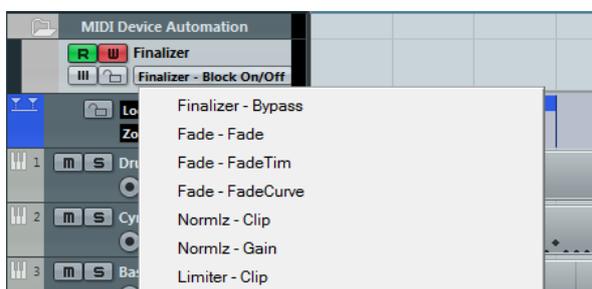
1. Open the device panel by clicking the Open Device Panels button in the Inspector.
2. Activate Write automation on the device panel.
You can automate the device by either moving knobs and sliders on the device panel or by drawing curves on the automation track for a selected parameter.



3. If you now go back to the Project window, there will be a MIDI Device Automation track in the track list.

If the track is hidden, select “Show All Used Automation” on the Track Folding submenu of the Project menu.

If you click in the name field, all parameters in the device are shown and can be selected for automation.



- To open another automation track for the next parameter on the pop-up menu, click the + button (“Append automation track”) at the bottom left of the automation track.

NOTE

If you wrote automation but your MIDI device is not yet connected, the panel will not display any parameter changes when playing back the track with the Read button activated.

MIDI Processing

This chapter describes the various MIDI processing functions available on the MIDI menu. They offer various ways to edit MIDI notes and other events, either in the Project window or from within a MIDI editor.

MIDI functions vs. MIDI modifiers

In some cases, the result of a MIDI function can also be obtained by using MIDI modifiers and effects. For example, the operations “Transpose” and “Quantize” are available both as MIDI modifiers and as MIDI functions.

The main difference is that MIDI modifiers and effects do not affect the actual MIDI events on the track in any way, while MIDI functions change the events “permanently” (although recent changes can be undone).

Use the following guidelines to decide which path to choose for operations that are available both as modifiers or effects and as functions:

- If you want to adjust a few parts or events only, use MIDI functions. The MIDI modifiers and effects affect the output of the whole track (although they can be made permanent in a specific area with the Merge MIDI in Loop function).
- If you want to experiment with different settings, use MIDI modifiers and effects.
- MIDI modifiers and effects settings are not reflected in the MIDI editors, since the actual MIDI events are not affected.

This can be potentially confusing; if you have transposed notes using modifiers for example, the MIDI editors will still show the notes with their original pitch (but they will play back at their transposed pitch). Therefore, MIDI functions are a better solution if you want to see the effects of your editing in the MIDI editors.

RELATED LINKS

[MIDI Realtime Parameters and MIDI Effects](#) on page 638

What is affected by the MIDI functions?

Which events are affected when you use a MIDI function depends on the function, the active window and the current selection:

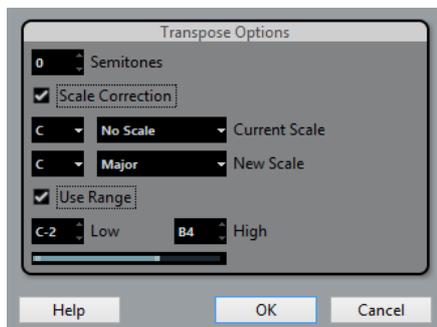
- Some MIDI functions only apply to MIDI events of a certain type. For example, quantization only affects notes, while the Delete Controllers function only applies to MIDI controller events.
- In the Project window, the MIDI functions apply to all selected parts, affecting all events (of the relevant types) in them.
- In the MIDI editors, the MIDI functions apply to all selected events. If no events are selected, all events in the edited part(s) will be affected.

Transpose

The “Transpose Setup...” option on the MIDI menu opens a dialog with settings for transposing the selected notes.

NOTE

You can also use the transpose track for transposing.



Semitones

This is where you set the amount of transposition.

Scale Correction

Scale Correction transposes the selected notes by forcing them to the closest note of the selected scale type. This can be used for creating interesting key and tonal changes, either by itself or in conjunction with the other settings in the Transpose Setup dialog.

- To activate Scale Correction, click the checkbox.
- Select a root note and scale type for the current scale from the upper pop-up menus.
- Select a root note and scale type for the new scale from the lower pop-up menus.

Make sure to select the correct root note if you want to keep the result in the same key as the original notes, or select an entirely different key if you want to experiment.

Use Range

If this option is activated, transposed notes will remain within the limit that you specify with the Low and High values.

If a note would end up outside this limit after transposition, it is shifted to another octave, keeping the correct transposed pitch if possible. If the range between the upper and lower limit is very narrow, the note will be transposed “as far as possible”, i. e. to notes specified with the Low and High values. If you set Low and High to the same value, all notes will be transposed to this pitch!

OK and Cancel

Clicking OK performs the transposition. Clicking Cancel closes the dialog without transposing.

RELATED LINKS

[Transpose Functions](#) on page 277

Making your settings permanent

The settings described in the chapter “MIDI realtime parameters” do not change the MIDI events themselves, but work like a “filter”, affecting the music on playback. Therefore, you may want to make them permanent, i. e. convert them to “real” MIDI events, for example to transpose a track and then edit the transposed notes in a MIDI editor. For this, you can use two commands from the MIDI menu: “Freeze MIDI Modifiers” and “Merge MIDI in Loop”.

RELATED LINKS

[MIDI Realtime Parameters and MIDI Effects](#) on page 638

Freeze MIDI Modifiers

“Freeze MIDI Modifiers” applies all filter settings permanently to the selected track. The settings are “added” to the events on the track, and all modifiers are set to zero. The “Freeze MIDI Modifiers” function affects the following settings for MIDI tracks:

- Several settings in the topmost section of the Inspector (program and bank selection and the Delay parameter).
- The settings in the MIDI Modifiers section (i. e. Transpose, Velocity Shift, Velocity Compression, and Length Compression).
- The settings in the MIDI Inserts section (for example, if you are using an arpeggiator and want to convert the added notes to real events).

The following settings for MIDI parts are taken into account as well:

- The Transpose and Velocity settings for parts displayed on the info line – the Volume setting is not taken into account.

Merge MIDI in Loop

The “Merge MIDI in Loop” function combines all unmuted MIDI events on all unmuted tracks, applies MIDI modifiers and effects, and generates a new MIDI part, containing all the events as you would hear them during playback.

PROCEDURE

1. Mute all the tracks that you do not want to include in the merge.
Instead of muting whole tracks, you can also mute individual parts.
2. Set up the left and right locators to encompass the area that you want to merge.
Only events starting within this area will be included.
3. Select the track on which you want the new part to be created.
If you do not select a track, a new MIDI track is created. If several MIDI tracks are selected, the new part is inserted on the first selected track. Existing data on the selected track can be kept or overwritten (see below).
4. On the MIDI menu, select “Merge MIDI in Loop...”.
The MIDI Merge Options dialog opens.
5. Activate the desired options and click OK.
A new part is created between the locators on the destination track, containing the processed MIDI events.

NOTE

If you only want to include events from a single track in the merge operation, you may want to solo the track.

RELATED LINKS

[MIDI Merge Options Dialog](#) on page 663

MIDI Merge Options Dialog

The following options are available:

Include Inserts

If this option is activated, any MIDI insert effects and MIDI modifiers activated for the tracks will be applied.

Include Sends

If this option is activated, any MIDI send effects activated for the track(s) will be applied.

Erase Destination

If this option is activated, any existing MIDI data between the left and right locators on the destination track will be deleted.

Include Chase

If this option is activated, events placed outside the selected part but relating to it will be included in the processing, e. g. a Program Change right before the left locator.

Convert VST 3

If this option is activated, all VST 3 data within the selected area is converted to MIDI data.

RELATED LINKS

[Chase](#) on page 220

Applying effects to a single part

Normally, the MIDI modifiers and effects affect a whole MIDI track. This may not always be what you want. For example, you may want to apply some MIDI effects to a single part (without having to create a separate track for that part only). The “Merge MIDI in Loop” function can help:

PROCEDURE

1. Set up your MIDI modifiers and MIDI effects the way you want them for the part. This will of course affect the whole track, but focus on the part for now.
 2. Set the locators to encompass the part.
An easy way to do this is to select the part and choose Set Locators to Selection Range from the Transport menu (or use the corresponding key command, by default P).
 3. Make sure that the track holding the part is selected in the track list.
 4. On the MIDI menu, select “Merge MIDI in Loop...”.
The MIDI Merge Options dialog opens.
 5. Activate the desired options, making sure that “Erase Destination” is activated, and click OK.
A new part is created on the same track, containing the processed events. The original part is deleted.
 6. Turn off or reset all MIDI modifiers and effects, so that the track plays back as before.
-

Dissolve Part

The Dissolve Part function on the MIDI menu allows you to separate MIDI events according to channels or pitches:

- When you work with MIDI parts (on MIDI channel “Any”) containing events on different MIDI channels, activate the “Separate Channels” option.
- To separate MIDI events according to pitch, activate the “Separate Pitches” option. Typical examples are drum and percussion tracks, where different pitches usually correspond to separate drum sounds.

NOTE

When dissolving a part into either separate channels or separate pitches, you can automatically remove the silent (empty) areas of the resulting parts by activating the “Optimized Display” checkbox in the Dissolve Part dialog. This option is not available when “Dissolve to Lanes” is activated.

RELATED LINKS

[Dissolving to lanes](#) on page 665

Dissolving parts into separate channels

Setting a track to MIDI channel “Any” will cause each MIDI event to play back on its original MIDI channel, rather than a channel set for the whole track. There are two main situations when “Any” channel tracks are useful:

- When you record several MIDI channels at the same time.
You may for example have a MIDI keyboard with several keyboard zones, where each zone sends MIDI on a separate channel. Recording on an “Any” channel track allows you to play back the recording with different sounds for each zone (since the different MIDI notes play back on separate MIDI channels).
- When you have imported a MIDI file of Type 0.
MIDI files of Type 0 contain only one track, with notes on up to 16 different MIDI channels. If you were to set this track to a specific MIDI channel, all notes in the MIDI file would be played back with the same sound; setting the track to “Any” will cause the imported file to play back as intended.

The Dissolve Part function scans MIDI parts for events on different MIDI channels and distributes the events into new parts on new tracks, one for each MIDI channel found. This allows you to work with each musical part individually.

PROCEDURE

1. Select the parts containing MIDI data on different channels.
 2. Select “Dissolve Part” from the MIDI menu.
 3. In the dialog that opens, select the “Separate Channels” option.
-

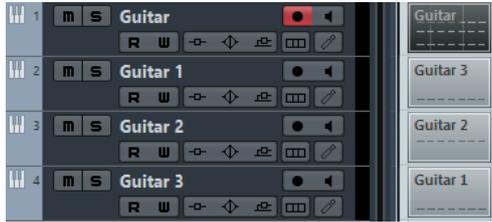
RESULT

Now, for each MIDI channel used in the selected parts, a new MIDI track is created and set to the corresponding MIDI channel. Each event is then copied into the part on the track with the corresponding MIDI channel. Finally, the original parts are muted.

An example:



This part contains events on MIDI channels 1, 2, and 3.



Selecting “Dissolve Part” creates new parts on new tracks, set to channels 1, 2, and 3. Each new part contains only the events on the respective MIDI channel. The original MIDI part is muted.

Dissolving parts into separate pitches

The Dissolve Part function can also scan MIDI parts for events of different pitches, and distribute the events into new parts on new tracks, one for each pitch. This is useful when the different pitches are not used in a melodic context, but rather for separating different sounds (e. g. MIDI drum tracks or sampler sound FX tracks). By dissolving such parts, you can work with each sound individually, on a separate track.

PROCEDURE

1. Select the parts containing MIDI data.
2. Select “Dissolve Part” from the MIDI menu.
3. In the dialog that opens, select the “Separate Pitches” option.

A new MIDI track is created for each used pitch in the selected parts. The events are then copied into the parts on the track for the corresponding pitch. Finally, the original parts are muted.

Dissolving to lanes

In the lower right section of the Dissolve Part dialog, you will find the “Dissolve to Lanes” option. If this option is activated, the part will not be dissolved onto different tracks but onto different lanes of the original track, allowing for a better management of MIDI material that “belongs together”.

This is useful when working with drums for example, as it allows you to split up a part into different drum sounds and edit these independently. When you have made the desired modifications, you can reassemble all your drums into one part using the Bounce MIDI command, see below.

This option is especially handy when working with instrument parts on instrument tracks. “Normal” dissolving would lead to a number of different tracks each routed to a separate instance of the connected VST instrument. When dissolving parts to lanes, the parts will still reside on the same track, with all parts using the same VST instrument instance.

Bounce MIDI

With this function, you can combine MIDI parts on several lanes to a single MIDI part. This can be used to reassemble a drum part that you dissolved onto several lanes for editing, see above. Simply select the MIDI parts on the different lanes that you want to combine and select “Bounce MIDI” on the MIDI menu.

During the bounce process, any muted parts will be removed. If transpose and velocity values were specified for the parts, these are taken into account as well.

Repeat Loop

With this function, the events inside the independent track loops will be repeated until the end of the part, i. e. the notes that were previously only played repeatedly are now actual notes on the MIDI track. Events to the right of the independent track loop (within the same part) will be replaced by this function.

RELATED LINKS

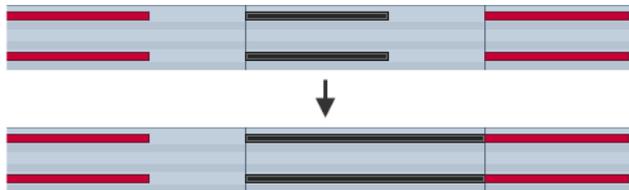
[Setting Up the Independent Track Loop](#) on page 495

Other MIDI functions

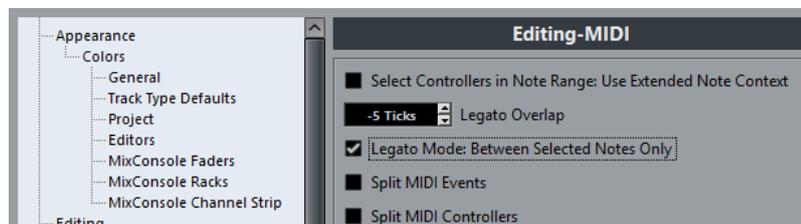
The following items can be found on the Functions submenu of the MIDI menu:

Legato

Extends each selected note so that it reaches the next note.



You can specify a gap or overlap for this function with the “Legato Overlap” setting in the Preferences dialog (Editing-MIDI page).



When using Legato with this setting, each note will be extended to end 5 ticks before the next note.

When you activate “Legato Mode: Between Selected Notes Only”, the length of the note will be adjusted so that it reaches the next selected note, allowing you to apply Legato only to your bass line, for example.

NOTE

You can also apply a legato using the “Scale Length/Legato” slider in the MIDI editors.

RELATED LINKS

[Key Editor Inspector](#) on page 687

Fixed Lengths

This function resizes all selected notes to the length set with the Length Quantize pop-up menu on the MIDI editor toolbar.

Pedals to Note Length

This function scans for Sustain pedal on/off events, lengthens the affected notes to match the Sustain pedal off position, and then removes the Sustain Controller on/off events.

Delete Overlaps (mono)

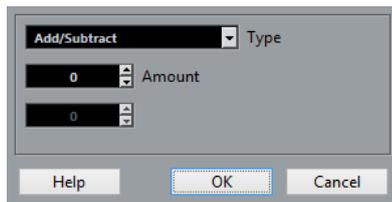
This function allows you to make sure that no notes of the same pitch overlap (i. e. that one starts before the other ends). Overlapping notes of the same pitch can confuse some MIDI instruments (a new Note On is transmitted before the Note Off is transmitted). This command can then be used to automatically solve the problem.

Delete Overlaps (poly)

This function shortens notes when required, so that no note begins before another ends. This happens regardless of which pitch the notes have.

Velocity

This function opens a dialog that allows you to manipulate the velocity of notes in various ways.



The following types of velocity processing are available:

Add/Subtract

This simply adds a fixed number to the existing velocity values. You set the value (positive or negative) with the Amount parameter.

Compress/Expand

Compresses or expands the “dynamic range” of MIDI notes by scaling the velocity values according to the Ratio setting (0 to 300 %). The principle behind this is that multiplying different velocity values with a factor higher than 1 (over 100 %) will also make the differences between velocity values greater, while using a factor lower than 1 (under 100 %) will make the differences smaller. In short:

- To compress (“even out” velocity differences), use ratio values below 100 %. After compression, you would probably want to add a velocity amount (with the Add/Subtract function) to maintain the average velocity level.
- To expand (create greater difference in velocity), use ratio values above 100 %. Before you expand, you may want to adjust the velocity with the Add/Subtract function, so that the average velocity is somewhere in the middle of the range. If the average velocity is high (near 127) or low (near 0), expansion will not work properly, simply because velocity values can only be between 0 and 127!

Limit

This function allows you to make sure that no velocity values fall outside a given range (the Lower and Upper values). Any velocity values outside this range are raised/lowered to exactly the Lower/Upper values.

Fixed Velocity

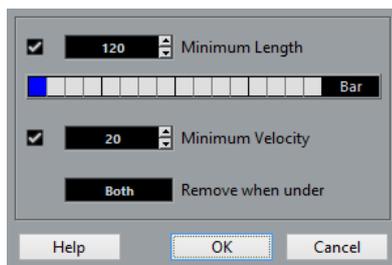
This function sets the velocity of all selected notes to the Insert Velocity value on the toolbar in the MIDI editors.

Delete Doubles

This function removes double notes, i. e. notes of the same pitch on the exact same position from the selected MIDI parts. Double notes can occur when recording in Cycle mode, after Quantizing, etc.

Delete Notes

Allows you to delete very short or weak notes. This is useful for automatically removing unwanted "ghost notes" after recording. Selecting "Delete Notes..." opens a dialog in which you set up the criteria for the function.



The parameters have the following functionality:

Minimum Length

When the Minimum Length checkbox is activated, the note length is taken into account, allowing you to remove short notes. You can either specify the minimum length (for notes to be kept) in the value field or by dragging in the graphical length display below.

- The graphical length display can correspond to 1/4 bar, one bar, two bars or four bars.

You change this setting by clicking in the field to the right of the display.



In this case, the whole length display corresponds to two bars, and the Minimum Length is set to 32nd notes (60 ticks).

Minimum Velocity

When the Minimum Velocity checkbox is activated, the velocity of notes is taken into account, allowing you to remove weak notes. You specify the minimum velocity (for notes to be kept) in the value display.

Remove when under

This setting is only available when both Minimum Length and Minimum Velocity is activated. By clicking in this field, you select whether both the length and the velocity criteria must be met for notes to be deleted, or whether one of the criteria will suffice.

OK and Cancel

Clicking OK performs the automatic delete according to the rules set up. Clicking Cancel closes the dialog without deleting notes.

Delete Controllers

This function removes all MIDI controllers from the selected MIDI parts.

Delete Continuous Controllers

This function removes all “continuous” MIDI controller events from the selected MIDI parts. Therefore, “on/off” events such as sustain pedal events are not removed.

Restrict Polyphony

Selecting this item opens a dialog in which you can specify how many “voices” are used (for the selected notes or parts). Restricting the polyphony this way is useful when you have an instrument with limited polyphony and want to make sure all notes will be played. The effect is achieved by shortening notes as required, so that they end before the next note starts.

Thin Out Data

Thins out MIDI data. Use this to ease the load on your external MIDI devices if you have recorded very dense controller curves, etc.

NOTE

Cubase Pro only: This also thins out MIDI controller and VST 3 events that form part of Note Expression data.

You can also manually thin out the controller data by using the quantize function in the Key Editor.

Extract MIDI Automation

This is an extremely useful function as it allows you to quickly and easily convert the continuous controllers of your recorded MIDI parts into MIDI track automation data, making them available for editing in the Project window.

PROCEDURE

- 1.** Select the desired MIDI part containing the continuous controller data.
 - 2.** On the MIDI menu, open the Functions submenu and select “Extract MIDI Automation”.
 - 3.** In the Project window, open the automation tracks for the respective MIDI track. You will find that an automation track has been created for each of the continuous controllers in the part.
-

RESULT

NOTE

In the MIDI editors, the controller data will automatically be removed from the controller lane.

This function can only be used for continuous controllers. Data such as Aftertouch, Pitchbend, or SysEx cannot be converted to MIDI track automation data.

NOTE

MIDI controller automation is also affected by the Automation Merge Mode.

RELATED LINKS

[MIDI Controller Automation](#) on page 595

[Merge Tempo from Tapping \(Cubase Pro only\)](#) on page 670

Reverse

This function inverts the order of the selected events (or of all events in the selected parts) rhythmically, causing the MIDI music to play backwards. Note that the effect is different from reversing an audio recording. With MIDI, the individual notes will still play as usual in the MIDI instrument – it is only the order of playback that is changed.

Mirror

This function inverts the order of the selected events (or of all events in the selected parts) graphically. Technically, this function turns a Note On message into a Note Off message and vice versa which can lead to rhythmic inaccuracies if the Note Off position of a note has not been quantized.

Merge Tempo from Tapping (Cubase Pro only)

This function allows you to create a complete tempo track based on your tapping.

MIDI Editors

There are several ways to edit MIDI in Cubase. You can use the tools and functions in the **Project** window for large-scale editing or the functions on the **MIDI** menu to process MIDI parts in various ways. To manually edit your MIDI data on a graphical interface, you can use the MIDI editors.

- The **Key Editor** presents notes graphically in a piano roll-style grid. The **Key Editor** also allows for detailed editing of non-note events such as MIDI controllers.
- The **Score Editor** shows MIDI notes as a musical score and provides advanced tools and functions for notation, layout, and printing.
Cubase Artist features a basic version of the **Score Editor**.
- The **Drum Editor** is similar to the **Key Editor**, but each key corresponds to a separate drum sound.
You can use the **Drum Editor** to edit drum or percussion parts.
- The **List Editor** shows all events in the selected MIDI parts as a list and allows you to view and edit their properties numerically. It also allows you to edit SysEx messages.
- The **In-Place Editor** allows you to edit MIDI parts directly in the **Project** window so that you can edit MIDI in context with other track types.
Cubase Pro only: You can also edit MIDI in the Project Browser.

RELATED LINKS

[Key Editor](#) on page 678

[Drum Editor](#) on page 721

[List Editor](#) on page 743

[Basic Score Editor \(Cubase Artist only\)](#) on page 707

[Project Browser \(Cubase Pro only\)](#) on page 880

[In-Place Editor](#) on page 757

Common MIDI Editor Functions

You can use the tools and functions within the MIDI editors to process MIDI parts in various ways.

Changing the Display Format for the Ruler

By default, the ruler shows the timeline in the display format that is selected on the transport panel.

You can change the display format for the ruler. Click the arrow button to the right of the ruler and select an option from the pop-up menu.

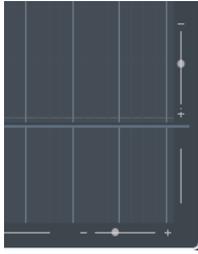
RELATED LINKS

[Ruler Display Formats](#) on page 51

Zooming in MIDI Editors

The MIDI editors provide several zooming options:

- Zoom sliders



- **Zoom** tool



- Select **Edit > Zoom**.

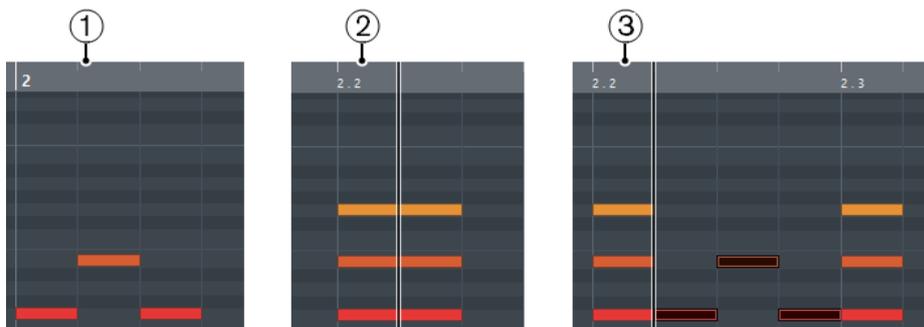
When you use the **Zoom** tool for zooming, you can determine if you want to zoom horizontal only or horizontal and vertical at a time.

- To activate/deactivate the corresponding option, select **File > Preferences > Editing > Tools** and activate/deactivate **Zoom Tool Standard Mode: Horizontal Zooming Only**.

Using Cut and Paste

You can use the **Cut**, **Copy**, and **Paste** options from the **Edit** menu to move or copy material within a part or between different parts.

- To insert note events at the project cursor position without affecting existing notes, select **Edit > Paste**.
- To insert note events at the project cursor position, move, and if necessary split the existing note events to make room for the pasted notes, select **Edit > Range > Paste Time**.



1. Data on clipboard
2. Cursor position
3. Pasted data at cursor position

Handling Note Events

Coloring Notes and Events

You can select different color schemes for the note events in the MIDI editor.

The following options are available on the **Event Colors** pop-up menu on the toolbar:

Velocity

The note events get different colors depending on their velocity values.

Pitch

The note events get different colors depending on their pitch.

Channel

The note events get different colors depending on their MIDI channel value.

Part

The note events get the same color as their corresponding part in the **Project** window. Use this option when you are working with 2 or more tracks in an editor, to see which note events belong to which track.

Grid Match

The note events get different colors depending on their time position. For example, this mode enables you to see if the notes of a chord start at the exact same beat.

Sound Slot (Cubase Pro only)

The note events get different colors depending on the articulation that has been assigned to the note in the **Expression Map Setup** dialog.

Voice

The note events get different colors depending on their voice (soprano, alto, tenor, etc.).

Chord Track

The note events get different colors depending on whether they match the current chord, scale, or both.

For all of the options except **Part**, the pop-up menu also contains a **Setup** option. This option opens a dialog in which you can specify the colors that are associated with velocities, pitches, or channels.

RELATED LINKS

[Expression maps \(Cubase Pro only\)](#) on page 760

Selecting Note Events

The selected MIDI editor determines which of the following methods apply.

Do one of the following:

- Use the **Object Selection** tool  to drag a selection rectangle around the note events that you want to select. You can also click individual events.
- Select **Edit > Select** and select one of the options.
- To select the previous or next note event, use the **Left Arrow/Right Arrow** key.
- To select several notes, press **Shift** and use the **Left Arrow/Right Arrow** key.
- To select all notes of a certain pitch, press **Ctrl/Cmd** and click on a key in the keyboard display to the left.
- To select all the following note events of the same pitch/staff, press **Shift** and double-click a note event.

RELATED LINKS

[Selecting Note Events using the Select Submenu](#) on page 674
[Editing](#) on page 999

Selecting Note Events using the Select Submenu

The **Select** submenu offers you several options to select note events.

To open the **Select** submenu, select **Edit > Select**.

All

Selects all note events in the edited part.

None

Deselects all note events.

Invert

Inverts the selection. All selected note events are deselected and all notes that were not selected are selected instead.

In Loop

Selects all note events that are partially or completely inside the boundaries of the left and right locators (only visible if locators are set).

From Start to Cursor

Selects all note events that begin to the left of the project cursor.

From Cursor to End

Selects all note events that end to the right of the project cursor.

Equal Pitch - all Octaves

Selects all note events of the highlighted part that have the same pitch (in any octave) as the selected note event.

NOTE

This function requires that a single note event is selected.

Equal Pitch - same Octave

Selects all note events of the highlighted part that have the same pitch (same octave) as the selected note event.

NOTE

This function requires that a single note event is selected.

Select Controllers in Note Range

Selects the MIDI controller data within the range of the selected note events.

RELATED LINKS

[Deleting Note Events](#) on page 675

Muting Note Events

You can mute individual note events in a MIDI editor. Muting individual notes allows you to exclude note events from playback.

Do one of the following:

- Click on a note event with the **Mute** tool.
- Drag a rectangle with the **Mute** tool, enclosing all note events that you want to mute.

- Select the note events and select **Edit > Mute**.
- To unmute a note event, click it or enclose it with the **Mute** tool. You can also select a note event and select **Edit > Unmute**.

Muted notes are dimmed in the note display.

Toggle Selections

- To toggle selected elements within a selection rectangle, press **Ctrl/Cmd** and enclose the same elements within a new selection rectangle.

Once you release the mouse button, the previous selection is deselected and vice versa.

Deleting Note Events

- To delete note events, click on them with the **Erase** tool or select them and press **Backspace**.

Cutting Note Events

The **Trim** tool allows you to cut off the end or the beginning of note events.

PROCEDURE

1. Select the **Trim** tool  on the toolbar.
 2. Do one of the following:
 - To trim the end of a single note event, click on the note event.
 - To trim the beginning of a single note event, press **Alt** and click the note event.
 - To trim several note events, click and drag with the mouse across the note events.
 - To set the same start and end time for all edited note events, press **Ctrl/Cmd** and vertically drag along the note events.
-

Editing Note Events on the Info Line

You can move, resize, or change the velocity of note events on the info line using regular value editing.

- To apply a value change to all selected note events, press **Ctrl/Cmd** and change a value on the info line.
- To adjust the pitch or velocity of note events via your MIDI keyboard, click in the **Pitch** or **Velocity** fields on the info line, and play a note on your MIDI keyboard.

If you have several note events selected and change a value, all selected events are changed by the set amount.

Duplicating and Repeating Note Events

You can duplicate and repeat note events in the same way as events in the **Project** window.

- To duplicate the selected note events, hold down **Alt** and drag the note events to a new position.
If **Snap** is activated, it determines to which positions you can copy notes.
- To copy the selected note events and place them directly behind the original, select **Edit > Functions > Duplicate**.

If several note events are selected, all of them are copied as one unit, maintaining the relative distance between the note events.

- To create a number of copies of the selected note events, select **Edit > Functions > Repeat**, specify the number, and click **OK**.
You can also press **Alt** and drag the right edge of the note events to the right to create copies of the note events.



Finding Exact Positions with Snap

The Snap function restricts horizontal movement and positioning to certain positions. This helps you find exact positions in the note display when editing note events in a MIDI editor. Affected operations include moving, duplicating, drawing, sizing, etc.

- To activate/deactivate snap, click **Snap** .
If you select the **Bars+Beats** display format, the snap grid is set by the quantize value on the toolbar. This makes it possible to snap to straight note values and to swing grids that have been set up in the **Quantize Panel**.
- If you select any of the other display formats, positioning is restricted to the displayed grid.

Setting Velocity Values

When you draw note events in the MIDI editor, the note events get the velocity value that is set in the **Insert Velocity** field on the toolbar. There are different methods to set the velocity.

- Use the **Edit Velocity** tool modifier. The cursor changes into a speaker, and next to the note, a field with the Note Velocity slider shows the value. Move the mouse pointer up or down to change the value.



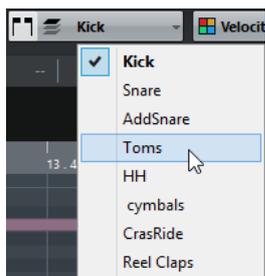
Value changes are applied to all selected notes.

For this, a tool modifier must be assigned for the **Edit Velocity** action. To see or edit the tool modifier, select **File > Preferences > Editing > Tool Modifiers > Select Tool**.

- Open the **Insert Velocity** pop-up menu and select a velocity value.
On this menu, you can also select **Setup** and specify custom velocity values for the pop-up menu.
- Double-click the **Insert Velocity** field on the toolbar and enter a velocity value.
- Assign key commands to **Insert Velocity 1-5** and use them.
This allows you to quickly switch between different velocity values when you enter note events.

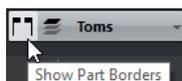
Handling Several MIDI Parts

- To activate a part for editing, open the **Currently Edited Part** menu and select a part.



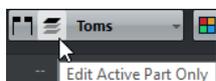
When you select a part from the list, it is automatically active and centered in the note display.

- To zoom in on an active part, select **Edit > Zoom > Zoom to Event**.
- To display defined borders for the active part, activate **Show Part Borders**.



If this option is activated, all parts, except the active part, are grayed out.

- To restrict editing operations to the active part, activate **Edit Active Part Only**.



- To change the size of the part, drag the part borders.
The part borders display the name of the active part.

NOTE

If the part that you open for editing is a shared copy, any editing that you perform affects all shared copies of this part. In the **Project** window, shared copies are indicated by an equal sign in the top right corner of the part.

Looping MIDI Parts

The **Independent Track Loop** function allows you to loop a MIDI part independent of the project playback.

When you activate the loop, the MIDI events within the loop are repeated continuously while other events on other tracks are played back as usual. Every time the cycle restarts, the independent track loop also restarts.

PROCEDURE

1. Activate **Independent Track Loop**  on the toolbar.

NOTE

If you activate **Independent Track Loop**, the **Link Project and Lower Zone Editor Cursors** function is automatically deactivated in the lower zone editor.

If the button is not visible, right-click the toolbar and select **Independent Track Loop** from the menu.

If you have set up a loop range in the **Project** window, it is hidden from the ruler in the MIDI editor.

2. **Ctrl/Cmd**-click in the ruler to specify the start of the independent track loop.
 3. **Alt**-click in the ruler to specify the end of the independent track loop.
-

RESULT

The independent loop range is indicated in a different color.

The start and end of the loop range are displayed on the status line.

AFTER COMPLETING THIS TASK

To repeat the events of the loop range and fill up the active MIDI part select **MIDI > Repeat Loop**.

Key Editor

The **Key Editor** is the default MIDI editor. It displays notes graphically in a piano roll-style grid. The **Key Editor** allows for detailed editing of notes and non-note events, such as MIDI controllers.

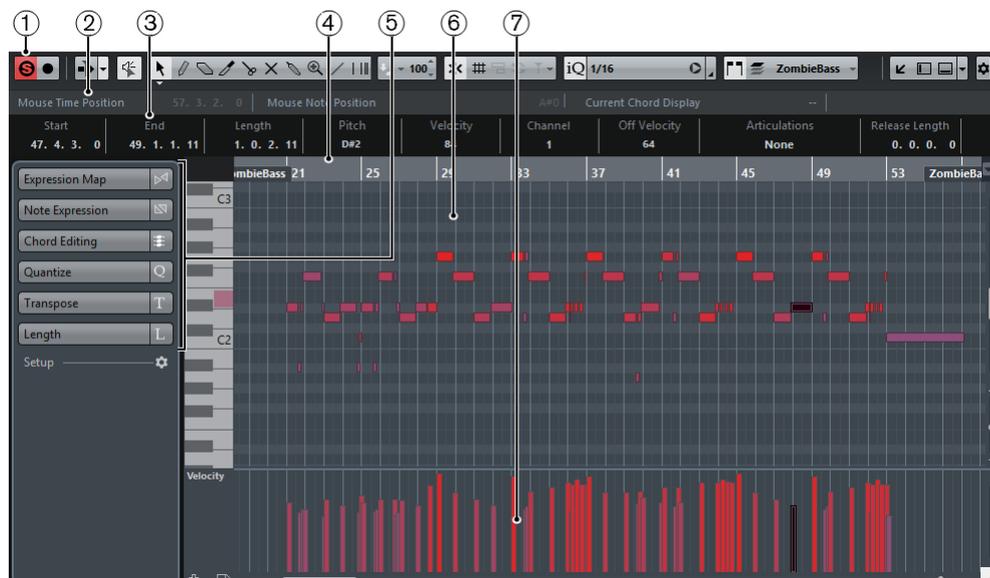
You can open the **Key Editor** in a separate window or in the lower zone of the **Project** window. Opening the **Key Editor** in the lower zone of the **Project** window is useful if you want to access the **Key Editor** functions from within a fixed zone of the **Project** window.

To open a MIDI part in the **Key Editor**, do one of the following:

- Double-click a MIDI part in the **Project** window.
- Select a MIDI part in the **Project** window and press **Return** or **Ctrl/Cmd-E**.
- Select a MIDI part in the **Project** window and select **MIDI > Open Key Editor**.
- In the **Key Commands dialog** in the **Editors** category, assign a key command for **Open Key Editor**. Select a MIDI part in the **Project** window and use the key command.

NOTE

If you select **MIDI > Set up Editor Preferences**, the **Preferences** dialog opens on the **Editors** page. Make your settings to specify, if you want the editors to open in a separate window or in the lower zone of the **Project** window.



Key Editor Window



Key Editor in Lower Zone

The **Key Editor** is divided into several sections:

1. **Toolbar**
Contains tools and settings.
2. **Status line**
Informs about the mouse time position, the mouse note position, and the current chord.
3. **Info line**
Displays note event information about a selected MIDI note.
4. **Ruler**
Displays the time line.
5. **Inspector**
Contains tools and functions for working with MIDI data.
6. **Note display**
Contains a grid in which MIDI notes are displayed as boxes.
7. **Controller display**
The area below the note display consists of one or multiple controller lanes.

NOTE

You can activate/deactivate the status line, the info line, and the controller lanes by clicking **Set up Window Layout** on the toolbar and activating/deactivating the corresponding options.

Toolbar

The toolbar contains tools and settings for the **Key Editor**.

- To show or hide the toolbar elements, right-click the toolbar and activate or deactivate the elements.

Static Buttons

Solo Editor



Solos the editor during playback if the editor has the focus.

Record in Editor



Enables the recording of MIDI data in the editor if the editor has the focus.

NOTE

This only works if **MIDI Record Mode** is set to **Merge** or **Replace**.

Left Divider

Left Divider



Allows you to use the left divider. Tools that are placed to the left of the divider are always shown.

Auto-Scroll

Link Project and Lower Zone Editor Cursors



Links timelines, cursors and zoom factors of the lower zone editor and the **Project** window.

NOTE

You cannot activate **Link Project and Lower Zone Editor Cursors** if **Independent Track Loop** is active.

Auto-Scroll



Keeps the project cursor visible during playback. The **Switch Auto-Scroll Settings** pop-up menu allows you to activate **Page Scroll** or **Stationary Cursor** and to activate **Suspend Auto-Scroll when Editing**.

Switch Auto-Scroll Settings



Allows you to specify the auto-scroll settings.

Tool Buttons

Object Selection



Allows you to select events.

Draw



Allows you to draw events.

Erase



Allows you to delete events.

Trim



Allows you to trim events.

Split



Allows you to split events.

Mute



Allows you to mute events.

Glue



Allows you to glue together events of the same pitch.

Zoom



Allows you to zoom in/out. Hold **Alt** and click to zoom out.

Line



Allows you to create a series of contiguous events.

Time Warp (Cubase Pro only)



Allows you to drag a musical position to a certain position in time.

Acoustic Feedback

Acoustic Feedback



Automatically plays back events when you move or transpose them, or when you create them by drawing.

Auto Select Controllers

Auto Select Controllers



Automatically selects controller data of the selected MIDI notes.

Independent Track Loop

Independent Track Loop



Activates/Deactivates the independent track loop.

NOTE

If you activate **Independent Track Loop**, the **Link Project and Lower Zone Editor Cursors** function is automatically deactivated in the lower zone editor.

Show Note Expression Data

Show Note Expression Data



Shows note expression data.

Multiple Part Controllers

Show Part Borders



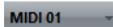
Shows/Hides part borders for the active MIDI part, within the left and right locators.

Edit Active Part Only



Restricts editing operations to the active part.

Currently Edited Part



Lists all parts that were selected when you opened the editor, and allows you to activate a part.

Indicate Transpositions

Indicate Transpositions



Allows you to display the transposed pitches of MIDI notes.

Insert Velocity

Insert Velocity



Allows you to specify a velocity value for new notes.

Nudge Palette

Trim Start Left



Increases the length of the selected event by moving its start to the left.

Trim Start Right



Decreases the length of the selected event by moving its start to the right.

Move Left



Moves the selected event to the left.

Move Right



Moves the selected event to the right.

Trim End Left



Decreases the length of the selected event by moving its end to the left.

Trim End Right



Increases the length of the selected event by moving its end to the right.

Transpose Palette

Move Up



Transposes the selected event up by a half note.

Move Down



Transposes the selected event down by a half note.

Move Up More



Transposes the selected event up by an octave.

Move Down More



Transposes the selected event down by an octave.

Snap

Snap On/Off



Activates/Deactivates the snap function.

Snap Type



Allows you to select one of the following snap types:

- **Grid**  snaps events to the grid that is selected in the **Quantize Presets** pop-up menu.
- **Grid Relative**  keeps the relative positions when snapping events to the grid.
- **Events**  snaps events to the start or end of other events.

- **Shuffle**  changes the order of events if you drag one event to the left or right of other events.
- **Magnetic Cursor**  snaps events to the cursor position.
- **Grid + Cursor**  snaps events to the quantize grid that is selected in the **Quantize Presets** pop-up menu or to the cursor position.
- **Events + Cursor**  snaps events to the start or end of other events or to the cursor position.
- **Grid + Events + Cursor**  snaps events to the quantize grid that is selected in the **Quantize Presets** pop-up menu, to the start or end of other events or to the cursor position.

Quantize

Iterative Quantize On/Off



Activates/Deactivates iterative quantize.

Quantize Presets



Allows you to select a quantize or a groove preset.

Apply Quantize



Applies the quantize settings.

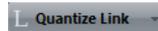
Open Quantize Panel



Opens the **Quantize Panel**.

Length Quantize

Length Quantize



Allows you to set a value for quantizing event lengths.

Step/MIDI Input

Step Input



Activates/Deactivates MIDI step input.

MIDI Input/Note Expression MIDI Input



Activates/Deactivates MIDI input and note expression MIDI input.

Move Insert Mode



Moves all note events to the right of the step input position to the right to make room for the inserted event when you insert notes.

NOTE

This only works if **Step Input** is activated.

Record Pitch



Includes the pitch when you insert notes.

Record NoteOn Velocity



Includes the NoteOn velocity when you insert notes.

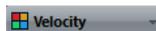
Record NoteOff Velocity



Includes the NoteOff velocity when you insert notes.

Event Colors

Event Colors



Allows you to select event colors.

Edit VST Instrument

Edit VST Instrument



Opens the VST Instrument that the track is routed to.

Right Divider

Right Divider



Allows you to use the right divider. Tools that are placed to the right of the divider are always shown.

Window Zone Controls

Open in Separate Window



This button is available in the lower zone editor. It opens the editor in a separate window.

Open in Lower Zone



This button is available in the editor window. It opens the editor in the lower zone of the **Project** window.

Set up Window Layout



Allows you to set up the window layout.

Set up Toolbar



Opens a pop-up menu where you can set up which toolbar elements are visible.

Status Line

The status line shows information about the mouse time position, the mouse note position, and the current chord.

To show or hide the status line, click **Set up Window Layout** on the toolbar, and activate or deactivate **Status Line**.



The on/off status of the status line in the **Key Editor** window and in the lower zone editor are independent of each other.

Mouse Time Position

Displays the exact time position of the mouse pointer, depending on the selected ruler display format. This lets you edit or insert notes at exact positions.

Mouse Note Position

Displays the exact pitch of the mouse pointer position. This facilitates finding the right pitch when entering or transposing notes.

Current Chord Display

When the project cursor is positioned over notes that form a chord, the chord is displayed here.

RELATED LINKS

[Looping MIDI Parts](#) on page 677

Info Line

The info line shows values and properties of the selected events. If several notes are selected, the values for the first note are displayed in color.

To show or hide the info line, click **Set up Window Layout** on the toolbar, and activate or deactivate **Info Line**.

Start	End	Length	Pitch	Velocity	Channel	Off Velocity	Articulations	Release Length	Voice	Text
1. 2. 1. 0	1. 3. 1. 0	0. 1. 0. 0	A5	100	1	64	None	0. 0. 0. 0	--	

Length and position values are displayed in the selected ruler display format.

The on/off status of the info line in the **Key Editor** window and in the lower zone editor are independent of each other.

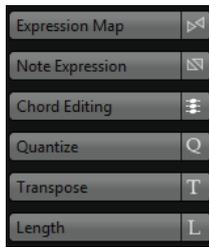
RELATED LINKS

[Editing Note Events on the Info Line](#) on page 675

[Changing the Display Format for the Ruler](#) on page 671

Key Editor Inspector

In a MIDI editor, the inspector is located left of the note display. The inspector contains tools and functions for working with MIDI data.



Expression Map (Cubase Pro only)

Allows you to load an expression map. Expression maps are useful for working with articulations.

Note Expression (Cubase Pro only)

Contains functions and settings related to Note Expression.

Chord Editing

Allows you to enter chords instead of single notes.

Quantize

Allows you to access the main quantize parameters. These are identical with the functions on the **Quantize** panel.

Transpose

Allows you to access the main parameters for transposing MIDI events.

Length

Contains length-related options, similar to the **Functions** submenu of the **MIDI** menu.

- To change the length of the selected MIDI events or all events of the active part if no events are selected, use the **Scale Length/Scale Legato** slider. At the maximum value the notes reach the beginning of the next note.
- To make the new length settings permanent, click **Freeze MIDI Lengths** to the right of the **Scale Length/Scale Legato** slider.
- To fine-tune the distance between consecutive notes, use the **Overlap** slider. At **0 Ticks**, the **Scale Length/Scale Legato** slider extends each note so that it reaches the next note exactly. Positive values cause the notes to overlap and negative values allow you to define a small gap between the notes.
- To use the **Legato** function or slider to extend a note until the next selected note, activate **Between Selected**.
This is identical with activating the **Legato Mode: Between Selected Notes Only** option in the **Preferences** dialog.

Setup

Allows you to open a dialog to edit the **Inspector** settings for the editor. Click **Setup Inspector** , and from the pop-up menu select **Setup**.

NOTE

These sections are also featured by the editor **Inspector** for the editor in the lower zone.

RELATED LINKS

[Expression maps \(Cubase Pro only\)](#) on page 760

[Setting up the Note Expression Inspector Section](#) on page 774

[Quantize Panel](#) on page 245

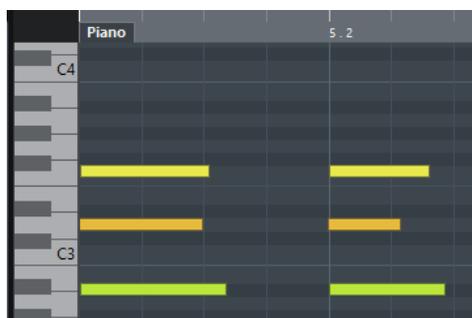
[Transpose Functions](#) on page 277

[Other MIDI functions](#) on page 666

[Opening the Editor Inspector](#) on page 58

Note Display

The note display is the main area in the **Key Editor**. It contains a grid in which note events are shown as boxes.



The width of a box corresponds to the note length. The vertical position of a box corresponds to the note number (pitch), with higher note events higher up in the grid. The piano keyboard helps you to find the right note number.

Controller Display

The area at the bottom of the **Key Editor** window is the controller display. It contains the controller events.

To show or hide the controller display, click **Set up Window Layout** on the toolbar, and activate or deactivate **Controller Lanes**.

The on/off status of the controller lanes in the **Key Editor** window and in the lower zone editor are independent of each other.

The controller display consists of one or several controller lanes that show one of the following properties or event types:

- Velocity values of the notes
- Pitchbend events
- Aftertouch events
- Poly Pressure events
- Program Change events
- System Exclusive events
- Any type of continuous controller event

Velocity values are shown as vertical bars in the controller display. Each velocity bar corresponds to a note event in the note display. Higher bars correspond to higher velocity values.



Events other than velocity values are shown as blocks. The block corresponds to the event values. The beginning of an event is marked by a curve point.

NOTE

Unlike note events, controller events have no length. The value of a controller event in the display is valid until the beginning of the next controller event.

Key Editor Operations

This section describes the principal editing operations within the **Key Editor**.

Inserting Note Events with the Object Selection Tool

You can insert note events with the **Object Selection** tool.

PREREQUISITE

You have set up the length for the note events quantize value in the **Length Quantize** pop-up menu of the toolbar.

PROCEDURE

- In the note display, double-click with the **Object Selection** tool at the position where you want to insert a note.

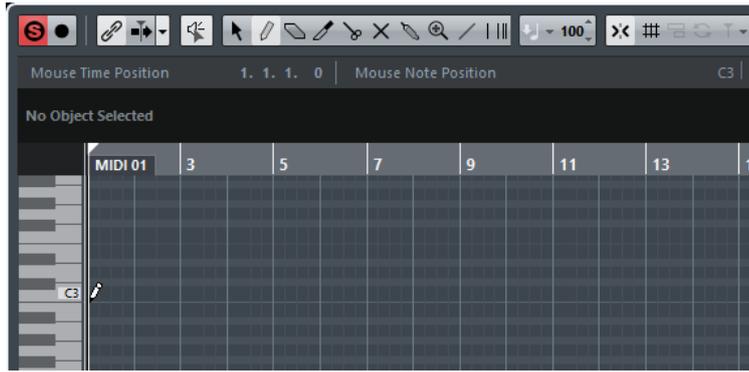
RESULT

A note is inserted at the position where you double-clicked with the length that you have set up in the **Length Quantize** pop-up menu.

Drawing Note Events with the Draw Tool

The **Draw** tool allows you to insert single note events in the note display.

When you move the cursor inside the note display, its position is indicated on the status line. Its pitch is indicated both on the status line and on the piano keyboard to the left.



- To draw a note, click in the note display.
The note event has the length that is set on the **Length Quantize** pop-up menu.
- To draw longer note events, click and drag in the note display.
The length of the note event is a multiple of the Length Quantize value. If **Length Quantize** is set to **Quantize Link**, the note value is determined by the quantize grid. The Snap function is taken into account.

NOTE

To temporarily switch from the **Object Selection** tool to the **Draw** tool, hold down **Alt**.

Modifying Note Values while Inserting Notes

When inserting note events, you can modify specific note values on the fly.

- To edit the note velocity, drag upwards or downwards.
- To edit the note pitch, hold down **Alt** and drag upwards or downwards.
- To edit the note length, drag to the left or to the right.
- To edit the time position, hold down **Shift** and drag to the left or to the right.

NOTE

You can activate/deactivate **Snap** temporarily by holding down **Ctrl/Cmd**.

Drawing Note Events with the Line Tool

In the note display, the **Line** tool allows you to draw a series of contiguous note events along different line shapes.

- To create contiguous note events, click and drag in the note display.
- To restrict movement to horizontal, press **Ctrl/Cmd** and drag.
The notes have the same pitch.

If **Snap** is activated, the note events and controller events are positioned and sized according to the **Quantize** and **Length Quantize** values.

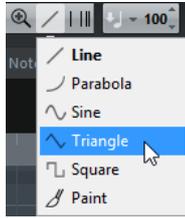
RELATED LINKS

[The Line Tool Modes](#) on page 691

The Line Tool Modes

The **Line** tool allows you to create a series of contiguous note events along different line shapes. You can also edit multiple controller events simultaneously.

To select a different line mode, click **Line** and select a mode from the menu.



The following line modes are available:

Line

If this option is activated, you can click and drag to insert note events in the note display along a straight line in any angle. Use this option to edit controller data along a straight line in the controller display.

Parabola, Sine, Triangle, Square

These modes insert note events along different curve shapes.

Paint

This mode allows you to insert note events by painting in the note display.

Moving and Transposing Note Events

There are several options to move and transpose note events.

- To move note events in the editor, select the **Object Selection** tool and drag them to a new position.
All selected note events are moved, maintaining their relative positions. **Snap** is taken into account.
- To allow only horizontal or only vertical movement, hold down **Ctrl/Cmd** while dragging.
- To move note events via the **Nudge Palette** buttons on the toolbar, select the note events and click a **Nudge Palette** button.
This moves the selected note events by the amount that is set on the **Quantize** pop-up menu.
- To move note events to the project cursor position, select the note events and select **Edit > Move to > Cursor**.
- To move a note event via the info line, select a note event and edit the **Position** or **Pitch** on the info line.
- To transpose note events, select the note events and use the **Transpose Palette** buttons on the toolbar or the **Up Arrow/Down Arrow** keys.
Transpose is also affected by the global transpose setting.
- To transpose note events via the **Transpose Setup** dialog, select the note events and select **MIDI > Transpose Setup**.
- To transpose note events in steps of one octave, press **Shift** and use the **Up Arrow/Down Arrow** keys.

NOTE

- When you move selected note events to a different position, any selected controllers for these note events move accordingly.
- You can also adjust the position of note events by quantizing.

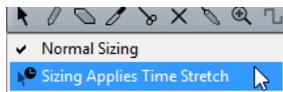
RELATED LINKS

[Transpose](#) on page 661

Resizing Note Events

Do one of the following:

- To resize the note event, position the **Object Selection** tool at the start or the end of a note event and drag the mouse cursor to the left or right.
- To apply time-stretching and Note Expression data (Cubase Pro only) to a controller that is associated with the note event that you resize, activate **Sizing Applies Time Stretch** for the **Object Selection** tool before you resize the note.



- To move the start or end positions of the selected notes in steps according to the **Length Quantize** value on the toolbar, use the **Trim Start/End** buttons on the **Nudge** palette.
- Select the note and adjust its length on the info line.
- Select **Draw**  and drag left or right within the note display to draw a note. The resulting note event length is a multiple of the **Length Quantize** value on the toolbar.
- Select **Trim**  and cut off the end or the beginning of note events.

RELATED LINKS

[Using the Setup options](#) on page 977

[Editing on the Info Line](#) on page 52

[Using the Trim Tool](#) on page 692

[Resizing Events with the Object Selection Tool - Sizing Applies Time Stretch](#) on page 193

Using the Trim Tool

The Trim tool allows you to change the length of note events by cutting off the end or the beginning of notes. Using the Trim tool means moving the note-on or the note-off event for one or several notes to a position defined with the mouse.

PROCEDURE

1. Select **Trim**  on the toolbar. The mouse pointer changes to a knife symbol.
2. To edit a single note, click on it with **Trim** . The range between the mouse pointer and the end of the note will be removed. Use the mouse note info on the status line to find the exact position for the trim operation.
3. To edit several notes, click and drag with the mouse across the notes.



By default, the Trim tool cuts off the end of notes. To trim the beginning of notes, press **Alt** while dragging. When dragged across several notes, a line is displayed. The notes will be trimmed along this line. If you press **Ctrl/Cmd** while dragging, you will get a vertical trim line, allowing you to set the same start or end time for all edited notes. You can change the Trim tool key commands in the Preferences dialog (Editing–Tool Modifiers page).

Splitting Note Events

- To split the note at the position that you point, click on a note with **Split** . If several notes are selected, they are all split at the same position. The snap setting is taken into account.
- To split all notes that are intersected by the project cursor position, select **Edit > Functions > Split at Cursor**.
- To split all notes that are intersected by the left or right locator at the locator positions, select **Edit > Functions > Split Loop**.

Gluing Note Events

You can glue together note events of same pitch.

- To glue note events, select **Glue**  and click on a note event. The note event is glued together with the next note event of the same pitch. The result is a long note event that spans from the start of the first note to the end of the second note and with the properties (velocity, pitch, etc.) of the first note event.

Changing the Pitch of Chords

You can use the chord type buttons to change the pitch of chords.

PROCEDURE

1. In the **Inspector**, open the **Chord Editing** section.
 2. In the note display, select the notes that you want to edit. If the chord is recognized, the root note, chord type, and tensions are indicated in the **Chord Type** field. This also works with arpeggiated notes.
 3. In the **Chord Editing** section, activate one of the **Triads** buttons or **4-Note Chords** buttons. The selected notes are transposed so that they fit the selected chord type.
 4. Use the **Up Arrow/Down Arrow** keys to change the pitch of the chord.
-

Changing the Voicing of Chords

PROCEDURE

1. In the **Inspector**, open the **Chord Editing** section.
2. In the note display, select the notes that you want to edit.

3. In the **Chord Editing** section, use the **Inversions** buttons and the **Drop Notes** buttons to change the voicing.

RESULT

The selected notes are transposed so that they fit the selected chord type.

Chord Editing Section

The **Chord Editing** section in the **Inspector** allows you to insert and edit chords, and change voicings.



Chord Type

Shows the chord type of the selected chords.

Add to Chord Track

Adds the chord indicated in the **Chord Type** field to the chord track. The chord event is inserted at the position on the chord track that corresponds to the position of the MIDI notes. Any existing chord events at this position are overwritten.

Match with Chord Track

Applies the chord events from the chord track to the selected notes in the MIDI editor. The chord event that is effective at the position of the first selected note is applied to the selected notes, which are then transposed. Only the basic chord type is applied. Tensions are not taken into account.

Only the first effective chord event is applied.

Triads

Allows you to insert triads to the note display. You can also click one of the **Triads** buttons to transpose the selected notes so that they fit to the selected chord type.

4-Note Chords

Allows you to insert 4-note chords to the note display. You can also click one of the **4-Note Chords** buttons to transpose the selected notes so that they fit to the selected chord type.

Inversions - Move highest note to bottom



Inverts the highest note of a chord. The corresponding notes are transposed by as many octaves as needed.

Inversions - Move lowest note to top



Inverts the lowest note of a chord. The corresponding notes are transposed by as many octaves as needed.

Drop Notes - Move the second highest note an octave lower



Moves the second highest note of a chord down by one octave.

Drop Notes - Move the third highest note an octave lower



Moves the third highest note of a chord down by one octave.

Drop Notes - Move the second and fourth highest notes an octave lower



Moves the second and fourth highest notes of a chord down by one octave.

Make Chords

Performs a chord analysis of the selected notes. If nothing is selected, the whole MIDI part is analyzed.

Inserting Chords

You can use the tools in the **Chord Editing** section of the **Inspector** to insert and edit chords.

PROCEDURE

1. In the Inspector, open the **Chord Editing** section.
2. Select the **Insert** tool  to the right of the chord type that you want to insert.
3. Click in the note display, drag to the left or right to determine the length of the chord. Drag up or down to determine its pitch.
To change the chord type while you insert chords, hold **Alt** and drag up or down.
If **Acoustic Feedback** is activated, you hear the chord while dragging. A tooltip indicates the root note and chord type of the inserted chord. **Snap** and **Length Quantize** are taken into account.

Applying Chord Events to Note Events

You can apply chord events from the chord track to notes in the MIDI editor.

PREREQUISITE

Create a chord track and add chord events.

PROCEDURE

1. Open the MIDI editor.
2. In the **Inspector**, open the **Chord Editing** section.
3. Select **Match with Chord Track**.

RESULT

The first chord event of the chord track is applied to the selected notes. Only the basic chord type is applied. Tensions are not taken into account.

Drum Map Handling

When a drum map is assigned to a MIDI or instrument track, the **Key Editor** displays the drum sound names as defined by the drum map. This allows you to use the **Key Editor** for drum editing, for example, when editing drum note lengths or when editing several parts to identify drum events.

The name of the drum sound is displayed in the following locations:

- On the info line in the **Pitch** field.
- On the status line in the **Mouse Note Position** field.
- In the note event if the zoom factor is high enough.
- When dragging a note event.

Expression Map Handling (Cubase Pro only)

When an expression map is assigned to a MIDI track, the musical articulations that are defined for that map are displayed in the following locations of the **Key Editor**:

- On the info line in the **Articulations** field.
- On the controller lane.
- In the note event if the vertical zoom factor is high enough.

Note Expression Data (Cubase Pro only)

The **Key Editor** is the main editor for working with Note Expression.

RELATED LINKS

[Expression maps \(Cubase Pro only\)](#) on page 760

Editing Note Events via MIDI Input

You can directly hear your editing results. Editing the properties of note events via MIDI can be a quick way to, for example, set the velocity value of a note event.

PROCEDURE

1. In the **Key Editor**, select the note event that you want to edit.
2. Click **MIDI Input**  on the toolbar.
Editing via MIDI is enabled.
3. Use the note buttons on the toolbar to decide which properties are changed by the MIDI input.
You can enable editing of pitch, note-on and/or note-off velocity. For example, with the following setting, the edited notes get the pitch and velocity values of the notes input via MIDI, but the note-off velocities remain as they are.



4. Play a note on your MIDI instrument.

RESULT

The selected note gets the pitch, velocity and/or note-off velocity of the played note. The next note in the edited part is automatically selected, to allow quick editing of a series of notes.

AFTER COMPLETING THIS TASK

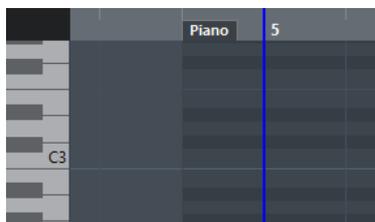
To try another setting, select the note again and play a note on your MIDI instrument.

Step Input

Step input, or step recording, allows you to enter note events or chords one at a time without worrying about the exact timing. This is useful, for example, when you know the part that you want to record but are not able to play it exactly as you want it.

PROCEDURE

1. On the toolbar, activate **Step Input** .
2. Use the note buttons to the right to determine which properties are included when you insert the note events.
For example, you can include the velocity and/or note-off velocity of the played notes. You can also deactivate the pitch property, in which case all notes get a pitch C3, no matter what you play.
3. Click anywhere in the note display to set the start position of the first note event or chord. The step input position is shown as a vertical line in the note display.



4. Specify the note event spacing and length with the **Quantize** and **Length Quantize** pop-up menus.
The note events that you insert are positioned according to the **Quantize** value and have the length of the **Length Quantize** value.

NOTE

If **Length Quantize** is set to **Quantize Link**, the note length is also determined by the **Quantize** value.

5. Play the first note event or chord on your MIDI instrument.
The note event or chord appears in the editor and the step input position advances by one quantize value step.

NOTE

If **Move Insert Mode** is activated, all note events to the right of the step input position are moved to make room for the inserted note event or chord.

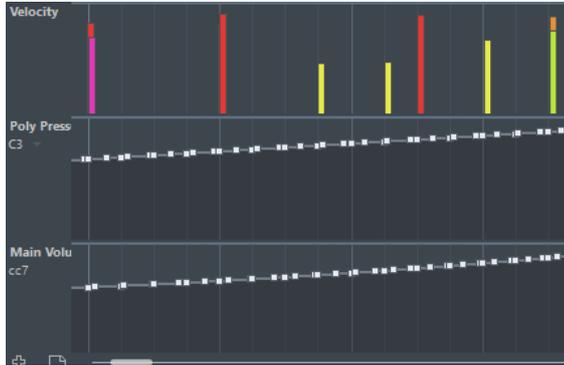


6. Continue in the same way with the rest of the note events or chords.
You can adjust the **Quantize** or **Length Quantize** values, to change the timing or note event lengths. You can also move the step input position manually by clicking anywhere in the note display.
To insert a rest, press the **Right Arrow** key. This advances the step input position by one step.
 7. When you are done, click **Step Input** again to deactivate step input.
-

Using the Controller Display

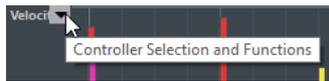
The Controller Display displays the controller events. By default, the controller display has a single lane that shows one event type at a time. However, you can add as many lanes as you need. The use of several controller lanes allows you to view and edit different controllers at the same time.

Each MIDI track has its own controller lane setup (number of lanes and selected event types). When you create new tracks, they get the last used controller lane setup.



The controller display with lanes.

- To add a controller lane, click **Create Controller Lane**  or open the **Controller Selection and Functions** menu and select **Create Controller Lane**.

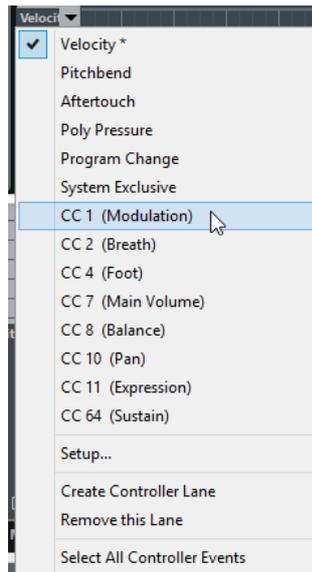


- To remove a controller lane, open the **Controller Selection and Functions** pop-up menu and select **Remove this Lane**.
This hides the lane from view. It does not affect the events in any way.
If you remove all lanes, the controller display is hidden. To bring it back, click **Create Controller Lane**.
- To show/hide multiple lanes, open the **Controller Lane Setup** pop-up menu, and select **Show/Hide Controller Lanes**.
- To reset the controller display to show only the velocity lane, open the **Controller Lane Setup** pop-up menu, and select **Velocity only**.
- To automatically show all controller lanes with controller data, open the **Controller Lane Setup** pop-up menu, and select **Show Used Controllers**.

Selecting the Event Type

Each controller lane shows one event type at a time. You can select which event type to display on a controller lane.

- To select which type is displayed, open the **Controller Selection and Functions** pop-up menu and select an event type.



Setting up Available Continuous Controllers

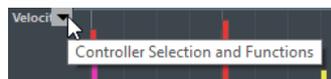
In the **MIDI Controller Setup** dialog, you can specify which continuous controllers are available for selection.

NOTE

The **MIDI Controller Setup** dialog can be opened from different areas in the program. The settings are global, that is, the setup you choose here affects all areas of the program where MIDI controllers can be selected.

PROCEDURE

1. Select **Controller Selection and Functions > Setup**.



2. In the **MIDI Controller Setup** dialog, move all the controllers that you need to the list on the left and move the controllers that you do not need to the list on the right.
3. Click **OK**.

Handling Controller Lane Presets

Once you have made up your controller lane setup, you can save it as a controller lane preset. For example, you can have a preset with one velocity lane and another preset with a combination of several controller lanes, such as velocity, pitchbend, or modulation.

Saving a Controller Lane Setup as Preset

You can save a controller lane setup via the **Controller Lane Setup** pop-up menu.

PROCEDURE

1. Click **Controller Lane Setup** .
2. Select **Add Preset**.
3. In the **Type In Preset Name** dialog, enter a name for the preset.

4. Click **OK**.

RESULT

Your controller lane setup is now available as a controller lane preset.

NOTE

To apply a saved preset, open the **Controller Lane Setup** pop-up menu and select the preset.

NOTE

To remove or rename a preset, open the **Controller Lane Setup** pop-up menu and select **Organize Presets**. A dialog opens, where you can remove and rename presets.

Adding Events in the Controller Display

- To create a new event in the velocity controller display, click with the **Draw** tool or the **Line** tool in the event display.
- To create a new event for any other event type, click with the **Draw** tool or the **Line** tool in the controller display.

NOTE

In the **Key Editor**, you can also add modulation controller events (CC1) by copying note events from the event display and pasting them on the controller lane.

Editing Events in the Controller Display

All controller values can be edited with the **Draw** tool or the **Line** tool. If you have selected more than one controller event on a controller lane, the controller lane editor is displayed.

- To edit events in the velocity controller display, use the **Draw** tool or the **Line** tool and drag the event.



The **Object Selection** tool automatically switches to the **Draw** tool when you move the pointer into the controller display.

When you move the pointer in the controller lane, the corresponding event type value is displayed below the event type name.

In velocity mode, no new controller events are added this way.

- To edit the values of any other event type in the controller display, press **Alt** and drag, or use the **Draw** tool or the **Line** tool and drag.



When you move the pointer inside a controller lane, the event type value changes corresponding to the pointer movement. The event type value is displayed below the event type name, left of the controller display.

- If there is more than one note at the same position, their velocity bars overlap on the controller lane. If none of the notes are selected, all notes at the same position are set to the same velocity value when you draw.
To edit the velocity of only one of the notes at the same position, first select the note in the note display.
- To select all events on a controller lane, open the **Controller Lane Setup** pop-up menu and select the **Select all Controller Events** option.
- To use the **Object Selection** tool to select events in the velocity controller display, press **Alt**.
- To cut, copy, and paste events in the controller display select the event and select **Edit > Cut/Copy/Paste**.
When pasting events, the events on the clipboard are added, starting at the project cursor position and maintaining their relative distances. If a pasted event ends up at the same position as an existing event of the same type, the old event is replaced.

NOTE

If the speaker icon (Acoustic Feedback) is activated on the toolbar, the notes are played back when you adjust the velocity. This allows you to audition your changes.

RELATED LINKS

[Controller Event Editor](#) on page 705

Editing Events in the Controller Display Using the Line Tool

You can draw and edit events in the controller display with the **Line** tool.

Line Mode

In **Line** mode, you can draw events in a straight line.

- To draw a straight line in the controller display, click where you want the ramp to start and drag the cursor to where you want the ramp to end.

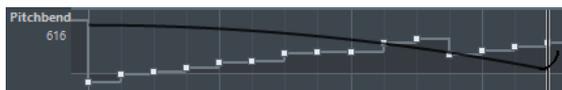


NOTE

If **Snap** is activated, the **Length Quantize** value determines the density of created controller curves. For very smooth curves, use a small **Length Quantize** value or deactivate **Snap**. To avoid over-dense controller curves, which can cause MIDI playback to stutter, use a medium-low density.

Parabola Mode

In **Parabola** mode, you can draw events on a parabola curve. This gives more natural curves and fades. The result depends on the direction from which you draw the parabola.



You can use modifier keys to determine the shape of the parabola curve.

- To reverse the parabola curve, press **Ctrl/Cmd**.

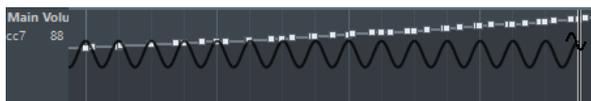
- To change the position of the whole curve, press **Alt**.
- To increase or decrease the exponent, press **Shift**.

NOTE

If **Snap** is activated, the **Length Quantize** value determines the density of created controller curves. For very smooth curves, use a small **Length Quantize** value or deactivate **Snap**. To avoid over-dense controller curves which can cause MIDI playback to stutter, use a medium-low density.

Sine, Triangle, and Square Mode

The **Sine**, **Triangle**, and **Square** modes create events with values that are aligned to continuous curves.



In these modes, the quantize value determines the period of the curve that is the length of one curve cycle and the **Length Quantize** value determines the density of the events. The lower the **Length Quantize** note value becomes, the smoother the curve gets.

NOTE

If **Length Quantize** is set to **Quantize Link** and you enter data in **Sine**, **Triangle** or **Square** mode, the density of the events depends on the zoom factor.

You can use modifier keys to determine the shape of the curve.

- To change the phase of the beginning of the curve, press **Ctrl/Cmd**.
- To change the position of the whole curve, press **Alt-Ctrl/Cmd**.
- To change the maximum position of the triangle curve or the pulse of the square curve in **Triangle** and **Square** mode, press **Shift-Ctrl/Cmd**. This creates sawtooth curves.
- You can also set the curve period freely by holding down **Shift** when you insert events in **Sine**, **Triangle**, or **Square** mode. Activate **Snap**, **Shift**-click and drag to set the length of one period. The period length will be a multiple of the quantize value.

Paint Mode

In **Paint** mode, you can draw in multiple notes.

The quantize value determines the density of created controller curves. For very smooth curves, use a small quantize value or deactivate **Snap**. However, this creates a large number of MIDI events, which can cause MIDI playback to stutter in some situations. A medium-low density is often sufficient.

Editing Events using the Draw Tool

You can draw and edit events in the controller display with the **Draw** tool. The **Draw** tool has the same functionality as the **Line** tool in **Paint** mode.

- To change the velocity of a single note, click on its velocity bar and drag the bar up or down.

NOTE

When you move the pointer inside a controller lane, the event type value changes corresponding to the pointer movement. The event type value is displayed below the event type name, left of the controller display.

Editing Articulations (Cubase Pro only)

You can add and edit musical expressions or articulations in the controller lane.

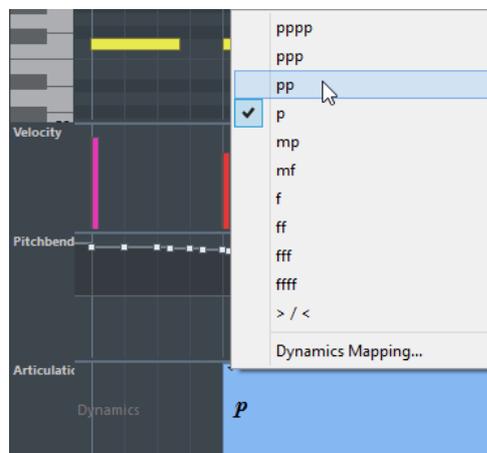
RELATED LINKS

[Expression maps \(Cubase Pro only\)](#) on page 760

Editing Dynamics (Cubase Pro only)

Provided that the dynamics mapping is set up and activated for the track, you can insert 12 dynamics symbols in the lower part of the **Articulations/Dynamics** lane.

- To insert a dynamics symbol, click in the controller lane with the **Draw** tool. A mezzo forte symbol is inserted.
- To select another dynamics symbol for an event, click on the triangle in the upper left corner of the event and select a symbol from the pop-up menu. If several events are selected, the same symbol is applied to all events.



- To step through the available dynamics symbols, use the mouse wheel or the **One down** and **One up** key commands. If several events are selected, they all change in increments, that is, relative to the original values.
- To modify the settings for the dynamics symbols, open the **Controller Selection and Functions** pop-up menu and select **Dynamics Mapping Setup**.

Moving and copying dynamics events is identical to working with other events on the controller lane.

RELATED LINKS

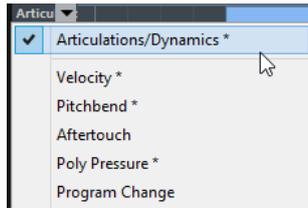
[Moving Events in the Controller Display](#) on page 706

[Working with mapped dynamics](#) on page 1217

Using Continuous Controllers

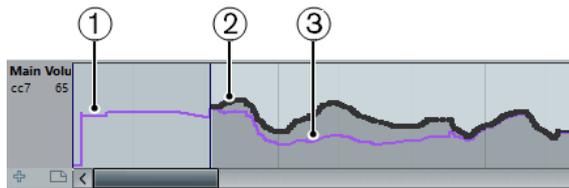
When a continuous controller is selected for a controller lane, additional data is displayed on the controller lane. This is due to the fact that MIDI controller data can be recorded or entered either for an automation track or for a MIDI part.

If automation data already exists for a controller, this is indicated by an asterisk that is displayed next to the controller name on the **Controller Selection and Functions** pop-up menu.



If the automation data is controller data that you have entered in a MIDI editor, the data is displayed on the controller lane. If the controller data was recorded on an automation track in the **Project** window, no events are displayed on the controller lane.

If conflicting controller data exists in different places, you can specify what happens on playback by making settings for the automation merge mode. The resulting curve is displayed in addition to the curve that you entered on the controller lane.



1. The controller curve before the part starts. This curve depends on the existing controller data and on the selected merge mode.
2. Controller curve entered on the controller lane.
3. Resulting controller curve if controller automation was also recorded on a track. These values depend on the selected automation merge mode.

On the controller lane, you can also see the controller curve that is applied before the part starts. This tells you which controller value is being used at the starting point of the part so that you can choose the start value accordingly.

The start value also depends on the automation merge mode.

RELATED LINKS

[MIDI Controller Automation](#) on page 595

[Automation Merge Modes](#) on page 595

Poly Pressure Events

Poly Pressure events are events that belong to a specific note number (key). That is, each poly pressure event has the following editable values: the note number and the amount of pressure.

When **Poly Pressure** is selected on the **Controller Selection and Functions** pop-up menu, value fields for the note number and for the amount are shown to the left of the controller display.

Adding Poly Pressure Events

PROCEDURE

1. Open the **Controller Selection and Functions** pop-up menu and select **Poly Pressure**.
2. Click on the keyboard display to set the note number.
The selected note number is displayed in the upper value field to the left of the controller display.

NOTE

This only works for the topmost lane. If you have selected Poly Pressure for several controller lanes, you have to type in the note number directly in the lower value field to the left of each lane.

3. Use the **Draw** tool to add a new event.
-

Editing Poly Pressure Events

PROCEDURE

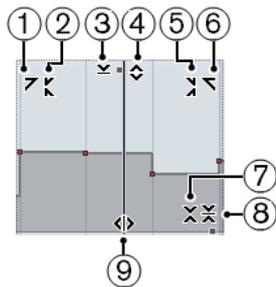
1. Open the **Controller Selection and Functions** pop-up menu and select **Poly Pressure**.
 2. Click the arrow button next to the note number to the left of the controller lane.
A pop-up menu appears and lists all note numbers for which there already are Poly Pressure events.
 3. Select a note number from the pop-up menu.
The Poly Pressure events for the selected note number are shown in the controller lane.
 4. Use the **Draw** tool to edit the events.
To edit events without adding new events, press **Ctrl/Cmd+Alt** while drawing.
Poly Pressure events can also be added and edited in the **List Editor**.
-

Controller Event Editor

The controller event editor allows you to perform additional scaling operations for selection ranges on existing controller curves.

- To open the controller event editor, activate the **Object Selection** tool and drag a selection rectangle on the controller lane.

The controller event editor features the following smart controls for specific editing modes:



1. **Tilt Left**
If you click in the upper left corner of the editor, you can tilt the left part of the curve. This allows you to tilt the event values at the start of the curve upwards or downwards.
2. **Compress Left**
If you **Alt**-click in the upper left corner of the editor, you can compress the left part of the curve. This allows you to compress or expand the event values at the start of the curve.
3. **Scale Vertically**
If you click in the middle of the upper border of the editor, you can scale the curve vertically. This allows you to raise or lower the event values of the curve in percent.
4. **Move Vertically**
If you click on the upper border of the editor, you can move the entire curve vertically. This allows you to raise or lower the values of the event values of the curve.
5. **Compress Right**
If you **Alt**-click in the upper right corner of the editor, you can compress or expand the right part of the curve. This allows you to compress or expand the event values at the end of the curve.
6. **Tilt Right**

If you click in the upper right corner of the editor, you can tilt the right part of the curve. This allows you to tilt the event values at the end of the curve upwards or downwards.

7. Scale Around Relative Center

If you **Alt**-click in the middle right corner of the editor, you can scale the curve relative to its center. This allows you to raise or lower the event values horizontally around the center of the editor.

8. Scale Around Absolute Center

If you click in the middle right corner of the editor, you can scale the curve absolute to its center. This allows you to raise or lower the event values horizontally around the center of the editor.

9. Stretch

If you click on the lower border of the editor, you can stretch the curve horizontally. This allows you to move the event values of the curve to the left or to the right.

Editing Selection Ranges

The controller lane editor allows you to perform additional scaling operations for selection ranges on existing controller curves.

- To open the controller lane editor, use the **Object Selection** tool to create a selection rectangle on the controller lane, encompassing the controller events that you want to edit. For velocity lanes, press **Alt** to get the **Object Selection** tool.

NOTE

- The controller lane editor is not available for **Articulation** or **Dynamics** lanes.
 - For velocity lanes, the editor also opens if you select multiple MIDI notes in the note display.
-
- To switch the controller lane editor to vertical scaling mode, press **Shift** and click on any of the smart controls.
 - To move the whole selection up/down or left/right, click on a controller event inside the editor and drag the curve.
 - To restrict the direction to horizontal or vertical movement, depending on the direction in which you start dragging, press **Ctrl/Cmd** when dragging.

NOTE

Snap is taken into account when moving controller curves horizontally.

Moving Events in the Controller Display

You can move events in a controller lane.

PROCEDURE

1. Select the events that you want to move with the **Object Selection** tool. You can also click and drag to create a selection rectangle that encompasses the events that you want to move.
 2. Click on a curve point inside the selection and drag the events.
-

RESULT

The events inside the selection are moved to the new position. Snap is taken into account.

NOTE

If **Auto Select Controllers** is activated on the **Key Editor** toolbar, selecting notes also selects the corresponding controller events. Moving events in the note display also moves the corresponding controller events.

RELATED LINKS

[Selecting Controllers within the Note Range](#) on page 707

Deleting Events in the Controller Display

IMPORTANT

If there is more than one note at the same position, there is only one visible velocity bar. Make sure that you delete only the notes that you want to delete.

- To delete events, click on them with the **Erase** tool or select them and press **Backspace**. You can also delete notes by deleting their velocity bars in the controller display. If there is more than one note at the same position, there may still only be one velocity bar visible. Make sure that you delete only the desired notes!

Selecting Controllers within the Note Range

A note range lasts until the start of the next note or the end of the part. Selected controllers for notes are moved when the corresponding notes are moved.

You can select the controllers within the range of the selected notes.

- To always select the corresponding controllers when you select a note event, activate **Auto Select Controllers** .
- To select the controllers within the note range, select **Edit > Select > Select Controllers in Note Range**. For this to work, only 2 notes have to be selected.

Basic Score Editor (Cubase Artist only)

The basic **Score Editor** is available in Cubase Artist. It shows MIDI notes as a musical score. This offers basic score editing and printing.

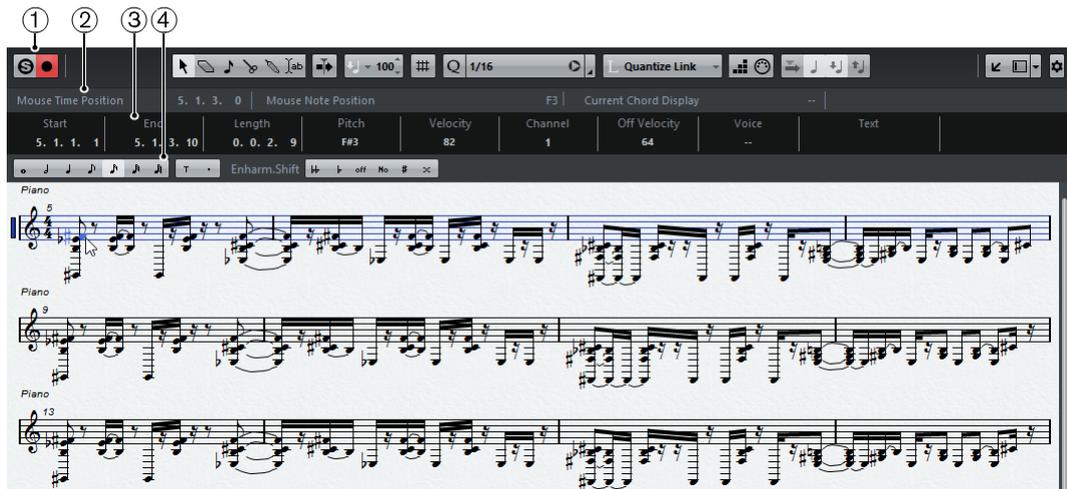
You can open the **Score Editor** in a separate window or in the lower zone of the **Project** window. Opening the **Score Editor** in the lower zone of the **Project** window is useful, if you want to access the **Score Editor** functions from within a fixed zone of the **Project** window.

To open an MIDI part in the **Score Editor**, do one of the following:

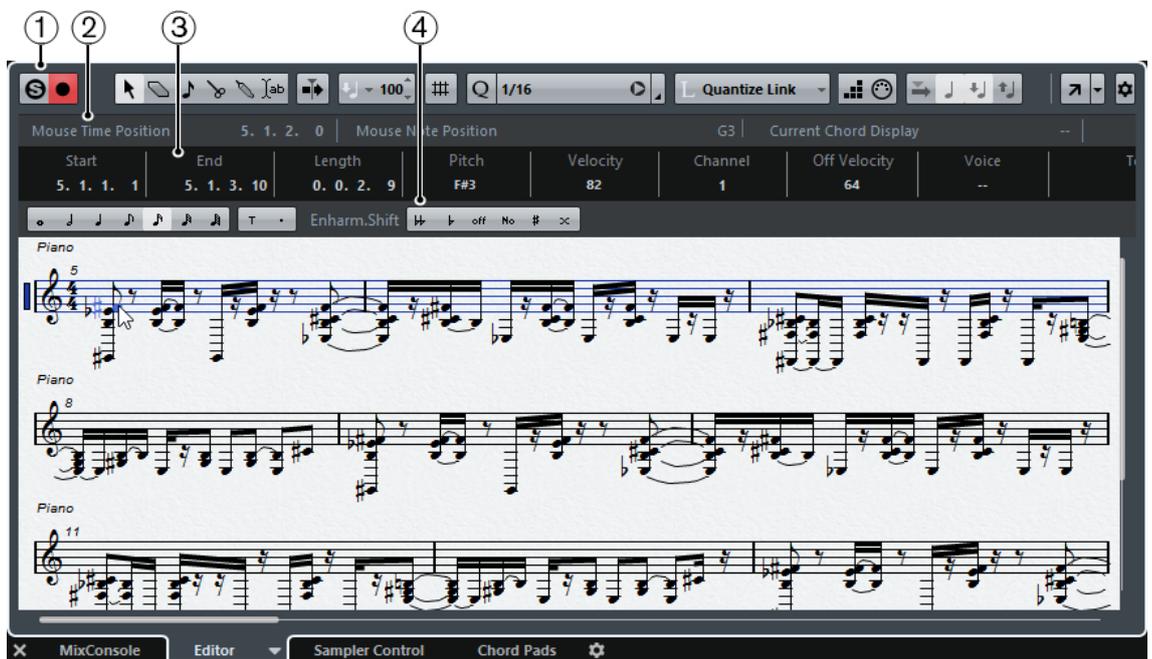
- Select a MIDI part in the **Project** window and select **MIDI > Scores > Open Score Editor**.
- Select a MIDI part in the **Project** window and press **Ctrl/Cmd-R**.

NOTE

If you select **MIDI > Set up Editor Preferences**, the **Preferences** dialog opens on the **Editors** page. Make your settings to specify, if you want editors to open in a separate window or in the lower zone of the **Project** window.



Score Editor Window



Score Editor in Lower Zone

The **Score Editor** is divided into several sections:

1. **Toolbar**
Contains tools and settings.
 2. **Status line**
Informs about the mouse time position, the mouse note position, and the current chord.
 3. **Info line**
Displays note event information about a selected MIDI note.
 4. **Extended toolbar**
Contains note value buttons and enharmonic shift buttons.
- To open one or several parts in the **Score Editor**, select one or several tracks or any number of parts, and select **MIDI > Open Score Editor**.
If you have selected parts on several tracks, you get one staff for each track. The staves are tied together by bar lines and placed in the order of the tracks in the **Project** window.

- To rearrange the staves, close the editor and in the **Project** window, rearrange the tracks. Then reopen the **Score Editor**.

NOTE

You can activate/deactivate the status line, the info line, the tools, and the filters by clicking **Set up Window Layout** on the toolbar and activating/deactivating the corresponding options.

Toolbar

The toolbar contains tools and various settings for the **Score Editor**.

- To show or hide the toolbar elements, right-click the toolbar and activate or deactivate the elements.

Static Buttons

Solo Editor



Solos the editor during playback if the editor has the focus.

Record in Editor



Enables the recording of MIDI data in the editor if the editor has the focus.

NOTE

This only works if **MIDI Record Mode** is set to **Merge** or **Replace**.

Tool Buttons

Object Selection



Allows you to select events.

Erase



Allows you to delete events.

Insert Note



Allows you to insert notes.

Split



Allows you to split events.

Glue



Allows you to glue together events of the same pitch.

Insert Text



Allows you to insert text.

Auto-Scroll

Auto-Scroll



Keeps the project cursor visible during playback.

Insert Velocity

Insert Velocity



Allows you to specify a velocity value for new notes.

Snap

Snap Type



Allows you to select one of the following snap types:

- **Grid**  snaps events to the grid that is selected in the **Quantize Presets** pop-up menu.
- **Grid Relative**  keeps the relative positions when snapping events to the grid.

Quantize

Iterative Quantize On/Off



Activates/Deactivates iterative quantize.

Quantize Presets



Allows you to select a quantize or a groove preset.

Apply Quantize



Applies the quantize settings.

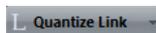
Open Quantize Panel



Opens the **Quantize Panel**.

Length Quantize

Length Quantize



Allows you to set a value for quantizing event lengths.

Step/MIDI Input

Step Input



Activates/Deactivates MIDI step input.

MIDI Input/Note Expression MIDI Input



Activates/Deactivates MIDI input and note expression MIDI input.

Move Insert Mode



Moves all note events to the right of the step input position to the right to make room for the inserted event when you insert notes.

NOTE

This only works if **Step Input** is activated.

Record Pitch



Includes the pitch when you insert notes.

Record NoteOn Velocity



Includes the NoteOn velocity when you insert notes.

Record NoteOff Velocity



Includes the NoteOff velocity when you insert notes.

Right Divider

Right Divider



Allows you to use the right divider. Tools that are placed to the right of the divider are always shown.

Window Zone Controls

Open in Separate Window



This button is available in the lower zone editor. It opens the editor in a separate window.

Open in Lower Zone



This button is available in the editor window. It opens the editor in the lower zone of the **Project** window.

Set up Window Layout



Allows you to set up the window layout.

Set up Toolbar

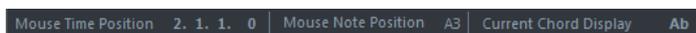


Opens a pop-up menu where you can set up which toolbar elements are visible.

Status Line

The status line is displayed below the toolbar. It shows important information about the mouse position and the chord display. Select the notes that form (compose) the chord to make the status line appear in the **Current Chord Display**.

To show or hide the status line, click **Set up Window Layout** on the toolbar, and activate or deactivate **Status Line**.



The on/off status of the status line in the **Score Editor** window and in the lower zone editor are independent of each other.

Mouse Time Position

Displays the exact time position of the mouse pointer, depending on the selected ruler display format. This lets you edit or insert notes at exact positions.

Mouse Note Position

Displays the exact pitch of the mouse pointer position. This facilitates finding the right pitch when entering or transposing notes.

Current Chord Display

When the project cursor is positioned over notes that form a chord, this chord is displayed here.

Info Line

The info line shows values and properties of the selected MIDI notes. If several notes are selected, the values for the first note are displayed in color.

To show or hide the info line, click **Set up Window Layout** on the toolbar, and activate or deactivate **Info Line**.

Start	End	Length	Pitch	Velocity	Channel	Off Velocity	Voice	Text
6. 4. 4. 0	7. 1. 1. 0	0. 0. 1. 0	C-2	100	1	64	Alto	Note

The on/off status of the info line in the **Score Editor** window and in the lower zone editor are independent of each other.

RELATED LINKS

[Changing the Display Format for the Ruler](#) on page 671

Extended Toolbar

The extended toolbar contains note value buttons and enharmonic shift buttons.

To show or hide the extended toolbar, click **Set up Window Layout**  on the toolbar, and activate or deactivate **Tools**.



Note Value Buttons

Allows you to select a note value for input. The **T** and **.** options are for triplet and dotted note values.

The selected note value is displayed in the Length value field on the toolbar and in the **Insert Note** tool shape.

To resize all selected notes to the same note value, press **Ctrl/Cmd** and click one of the note value buttons.

Enharmonic Shift

Allows you to manually select whether a note is displayed with flat or sharp accidentals. The **Off** button resets the notes to original display. The other options are **double flats**, **flats**, **No** (no accidentals shown, regardless of pitch), **sharps**, and **double sharps**.

RELATED LINKS

[Enharmonic Shift](#) on page 719

Score Display

The main area of the **Score Editor** window shows the notes in the edited parts on one or several staves. Parts on different tracks are shown on different staves.



- If you are editing one or several parts on the same track, as much of them as possible is shown on several staves, comparable with a score on paper.
- If you are editing parts on several tracks, they are put on a grand staff. A grand staff is composed of multiple staves that are tied together by bar lines.
- The number of bars that are displayed on the screen depends on the size of the window and the number of notes in each bar.
- The end of the last part is indicated by a double bar line.

All MIDI input is directed to one of the tracks, which is called the active staff. The active staff is indicated by a rectangle to the left of the clef symbol.



- To change the active staff, click on the staff that you want to activate.

Score Editor Operations (Cubase Artist only)

This section describes the principal editing operations within the **Score Editor**.

Improving the Score Display

When you open the **Score Editor** for a part that was recorded in real time, the score may not look as legible as you expect. The **Score Editor** can ignore the minor time variances in performance and make a neater score. To achieve this, the **Staff Settings** dialog provides settings that determine how the program displays the music.

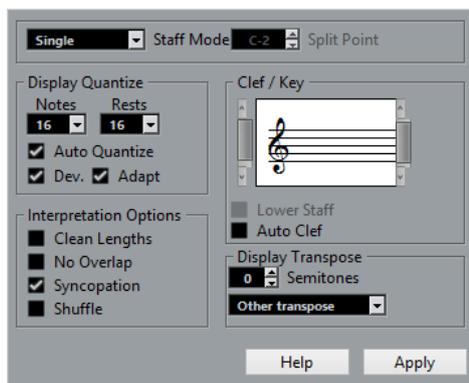
Staff Settings Dialog

This dialog allows you to change how Cubase displays the music.

IMPORTANT

The settings that you make in this dialog are independent for each staff (track), but common for a piano staff that you have created with the **Split** option.

To open the **Staff Settings** dialog, double-click in the area to the left of the staff, or select a staff and select **MIDI > Scores > Staff Settings**.



NOTE

The time signature follows the time signatures that are set in the **Tempo Track** editor. These settings are common to all tracks/staves in the score.

Staff Mode

The **Staff Mode** determines how the staff is shown.

- In **Single** mode, all notes in the part are shown in the same staff.
- In **Split** mode, the part is split on the screen into a bass and treble clef, as in a piano score. The **Split Point** value determines where you want the split to occur. Notes above and including the split note appear on the upper staff, and notes below the split note appear on the lower staff.



Before and after setting a split at C3.

Display Quantize

This section allows you to change the way Cubase displays scores.

IMPORTANT

These display values are only used for the graphical display in the **Score Editor**. They do not affect the playback.

Notes

Determines the smallest note value to be displayed and the smallest position to be recognized and properly displayed. Set this to the smallest significant note position used in your music.

For example, if you have notes on odd 16th note positions, set this value to 16. The **T** values are for triplet note values. This setting is partly overridden by **Auto Quantize**.

Rests

This value is used as a recommendation. Cubase does not display rests smaller than this value, except where necessary. In effect, this setting also determines how the length of notes is displayed. Set this value according to the smallest note value (length) that you want to be displayed for a single note, positioned on a beat.

Auto Quantize

Allows you to make your score look as legible as possible. **Auto Quantize** allows you to mix straight notes with tuplets (triplets) in a part. However, **Auto Quantize** also uses the (display) quantize value. If there is no appropriate note value for a certain note or group of notes, it uses the set quantize value is used to display it.

Generally, only activate this option if your music contains mixed triplets and straight notes. If the part is imprecisely played and/or complex, **Auto Quantize** may have a problem figuring out exactly what you mean.

Dev.

If this option is activated, triplets/straight notes are detected even if they are not exactly on the beat. However, if you know that your triplets/straight notes are perfectly recorded, either through quantizing or entered by hand, deactivate this option.

This option is only available if **Auto Quantize** is activated.

Adapt

If this option is activated, the program guesses that when one triplet is found, there are probably more triplets surrounding it. Activate this option if not all of your triplets are detected.

This option is only available if **Auto Quantize** is activated.

Clef and Key

In this section, you can set the correct clef and key.

Clef/Key Display

Allows you to select the clef or key via the scrollbar.

Lower Staff

Sets the clef and key to the lower staff.

Auto Clef

If this option is activated, Cubase attempts to guess the correct clef, judging from the pitch of the music.

Display Transpose

In this section, you can specify a separate display transpose setting for each staff (track). This transposes the notes in the score without affecting how the notes are played back. This allows you to record and play back a multi staff arrangement and still score each instrument according to its own transposition.

Semitones

Allows you to manually set a display transpose value.

Instrument

Allows you to select the instrument for which you are scoring.

Interpretation Options

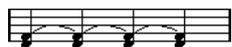
In this section, you can make additional settings on how the score is displayed.

Clean Lengths

If this option is activated, notes that are considered to be chords are shown with identical lengths. Longer notes are displayed shorter than they are. Notes with very short overlaps are also cut off. This is similar to the **No Overlap** option, but with a more subtle effect.

No Overlap

If this option is activated, one note is never shown as overlapping another, lengthwise. This allows long and short notes that start at the same point to be displayed without ties. The long notes are cut off in the display. This makes the music more legible.



A sample measure with **No Overlap** deactivated.



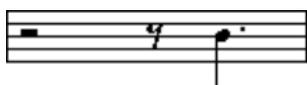
A sample measure with **No Overlap** activated.

Syncopation

If this option is activated, syncopated notes are shown in a more legible way.



A dotted quarter note at the end of a bar when **Syncopation** is deactivated.



A dotted quarter note at the end of a bar when **Syncopation** is activated.

Shuffle

If this option is activated and you have played a shuffle beat, the beat is displayed as straight notes, not as triplets. This is very common in jazz notation.

Quantize Value

When you move the mouse pointer over the score, the **Mouse Time Position** field on the status line tracks your movement and shows the current position in bars, beats, 16th notes, and ticks.

The quantize value controls the positioning on screen. If you set the value to 1/8, you can only insert and move notes to 8th note positions, at quarter notes, at half bars, or at bar positions.

It is recommended to set the quantize value to the smallest note value in the piece. This does not stop you from inputting notes at coarser positions. However, if you set the quantize value to a too small note value, it is easier to make mistakes.



With the quantize value set to 1/8, you can only input notes at 8th note positions.

You can also use the **Quantize Panel** to create other quantize values, irregular grids, etc.

Creating Notes

In the score display, the **Insert Note** tool allows you to create notes. However, you must first set the note value (length) and spacing.

PROCEDURE

1. Set the note value in one of the following ways:
 - Click the note symbols on the extended toolbar.
 - Select an option from the **Length Quantize** pop-up menu on the toolbar.
 2. Select the **Insert Note** tool.

If you selected the note value via the extended toolbar buttons, the **Insert Note** tool is automatically selected.
 3. Open the **Quantize Presets** pop-up menu on the toolbar and select a quantize value.
 4. Move the mouse over the staff to find the correct position.

The position is displayed on the **Mouse Time Position** display on the status line. The position snaps to the grid that is defined by the quantize value.
 5. Move the mouse vertically to find the correct pitch.

The **Mouse Note Position** display on the status line shows the pitch at the pointer position.
 6. Click in the staff.
-

RESULT

The note appears in the score. The notes get the insert velocity value that is set in the **Insert Velocity** field on the toolbar.

NOTE

If the notes that you enter appear to have the wrong note value you may have to adjust the **Display Quantize** settings. For example, you enter a 1/32 note that is displayed as a 1/16 note.

RELATED LINKS

[Setting Velocity Values](#) on page 676

[Display Quantize](#) on page 715

Moving and Transposing Notes

PROCEDURE

1. Open the **Quantize Presets** pop-up menu on the toolbar and select a quantize value.
 2. If you want to hear the pitch of the note while moving, activate **Acoustic Feedback** on the toolbar.
 3. Select the notes that you want to move.
 4. Click one of the selected notes and drag it to a new position and/or pitch.
The horizontal movement of the note is snaps to the current quantize value. The position boxes on the toolbar show the position and pitch for the dragged note.
To restrict moving to one direction, press **Ctrl/Cmd** while dragging.
-

Duplicating Notes

PROCEDURE

1. Open the **Quantize Presets** pop-up menu on the toolbar and select a quantize value.
 2. Select the notes that you want to duplicate.
 3. Press **Alt** and drag the notes to their new position.
To restrict moving to one direction, press **Ctrl/Cmd** while dragging.
-

Changing the Note Length

The displayed note length is not necessarily the actual note length. It also depends on the note values and rest values for **Display Quantize** in the **Staff Settings** dialog. This is important to remember when you change the length of a note.

You can change the length of a note in the following ways:

- Select the notes that you want to change and **Ctrl/Cmd**-click on one of the note icons on the extended toolbar.
All the selected notes are assigned to the length of the clicked note.
- Select the notes that you want to change and edit the length values on the info line.

RELATED LINKS

[Improving the Score Display](#) on page 714

[Editing Note Events on the Info Line](#) on page 675

Splitting and Gluing Note Events

- To split 2 notes that are strung together by a tie, click on the tied note head with the **Cut** tool.
- The note is divided into 2, with the respective length of the main and the tied note.
- To glue a note to the next note with the same pitch, click on a note with the **Glue** tool.

Enharmonic Shift

You can perform an enharmonic shift on notes that are not displayed with the accidentals you wish.

PROCEDURE

1. Select the notes that you want to shift.
2. Click one of the enharmonic shift buttons on the extended toolbar.

RELATED LINKS

[Extended Toolbar](#) on page 712

Flipping Stems

The direction of the note stems is automatically selected according to the note pitches. However, you can change this manually.

PROCEDURE

1. Select the notes for which you want to flip the stem direction.
2. Select **MIDI > Scores > Flip Stems**.

Working with Text

You can use the **Text** tool to add comments, articulation, or instrumentation advice and other text strings anywhere in the score display.

Adding Text

PROCEDURE

1. On the toolbar, select the **Text** tool.



2. Click anywhere in the score.
A blinking cursor indicates that you can enter text.
3. Enter the text and press **Return**.

Editing Text

- To edit existing text, double-click it with the **Object Selection** tool.
This opens the text for editing. Use the **Up Arrow**, **Down Arrow**, **Left Arrow**, **Right Arrow** keys to move the cursor, delete characters with the **Delete** or **Backspace** keys, press **Return** when you are finished.

- To delete text blocks, select them with the **Object Selection** tool and press **Backspace** or **Delete**.
- To move text blocks, drag them to a new position.
- To duplicate text blocks, press **Alt** and drag them to a new position.

Changing the Text Font, Size, and Style

You can change the font, size, and style of the text that you have added to the score display.

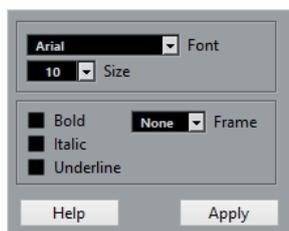
PROCEDURE

1. Do one of the following:
 - To change the settings for a specific text block, click on the text with the **Object Selection** tool.
 - To set the default settings for all new text blocks, unselect any selected text block and change the settings.
 2. Select **MIDI > Scores > Set Font**.
 3. In the **Font Settings** dialog, make your settings.
 4. Click **Apply**.
 5. Optional: Select another text block, adjust the settings, and click **Apply**.
-

Set Font Dialog

In this dialog, you can change the font, size, and style of the text that you have added to the score display.

To open the **Set Font** dialog, select **MIDI > Scores > Set Font**.



Font

Allows you to specify the font for the text. Which fonts are available on the pop-up menu depends on the fonts that you have installed on your computer.

IMPORTANT

Do not use the Steinberg fonts. These are special fonts used by the program, for example, for score symbols, and not suited for common text.

Size

Sets the size of the text.

Frame

Allows you to enclose the text in a rectangular (box) or oval frame.

Font Options

Determine whether the text is formatted bold, italic, and/or underlined.

Printing the Score

PROCEDURE

1. Open the parts that you want to print in the **Score Editor**.
2. Select **File > Page Setup** and make sure that all your printer settings are correct.

IMPORTANT

If you change your setting for paper size, scale, and margins now, the score may change its look.

3. Click **OK**.
 4. Select **File > Print**.
 5. In the **Print** dialog, make your settings.
 6. Click **Print**.
-

Drum Editor

The **Drum Editor** is the editor to use when you are editing drum or percussion parts.

You can open the **Drum Editor** in a separate window or in the lower zone of the **Project** window. Opening the **Drum Editor** in the lower zone of the **Project** window is useful, if you want to access the **Drum Editor** functions from within a fixed zone of the **Project** window.

To open a MIDI part in the **Drum Editor**, do one of the following:

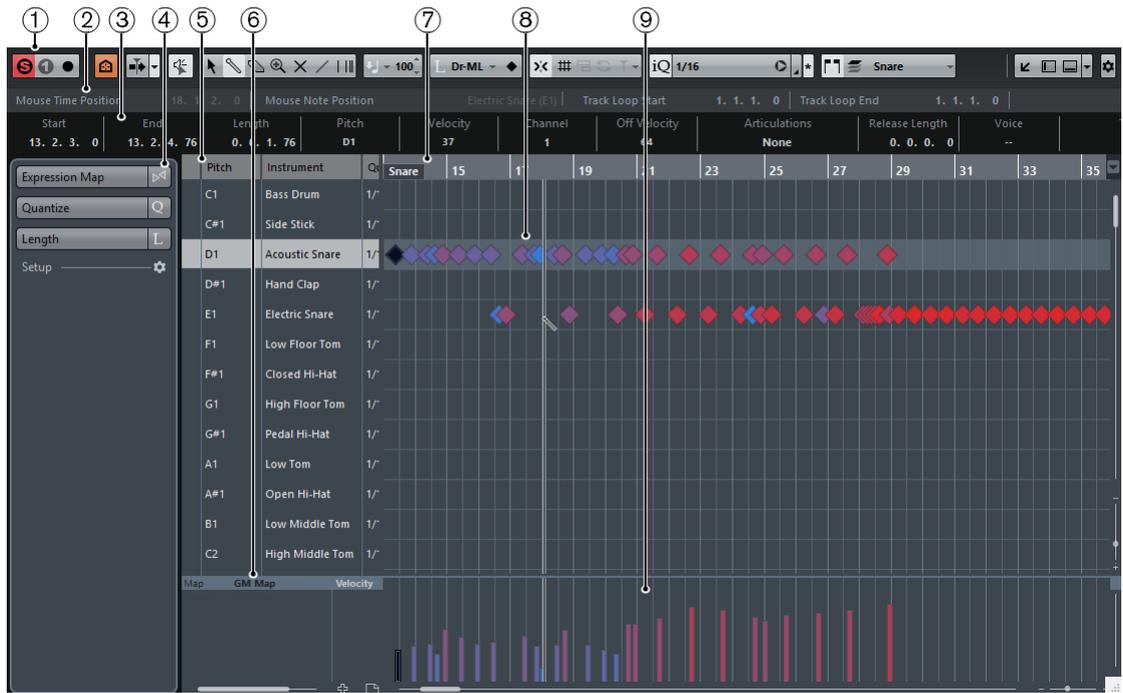
- Select a MIDI part in the **Project** window and select **MIDI > Open Drum Editor**.

If the MIDI track has a drum map assigned and **Editor Content Follows Event Selection** and **Use Drum Editor when Drum Map is assigned** are activated in the **Preferences** dialog (**Editors** page), you can do the following to open a MIDI part in the **Drum Editor**:

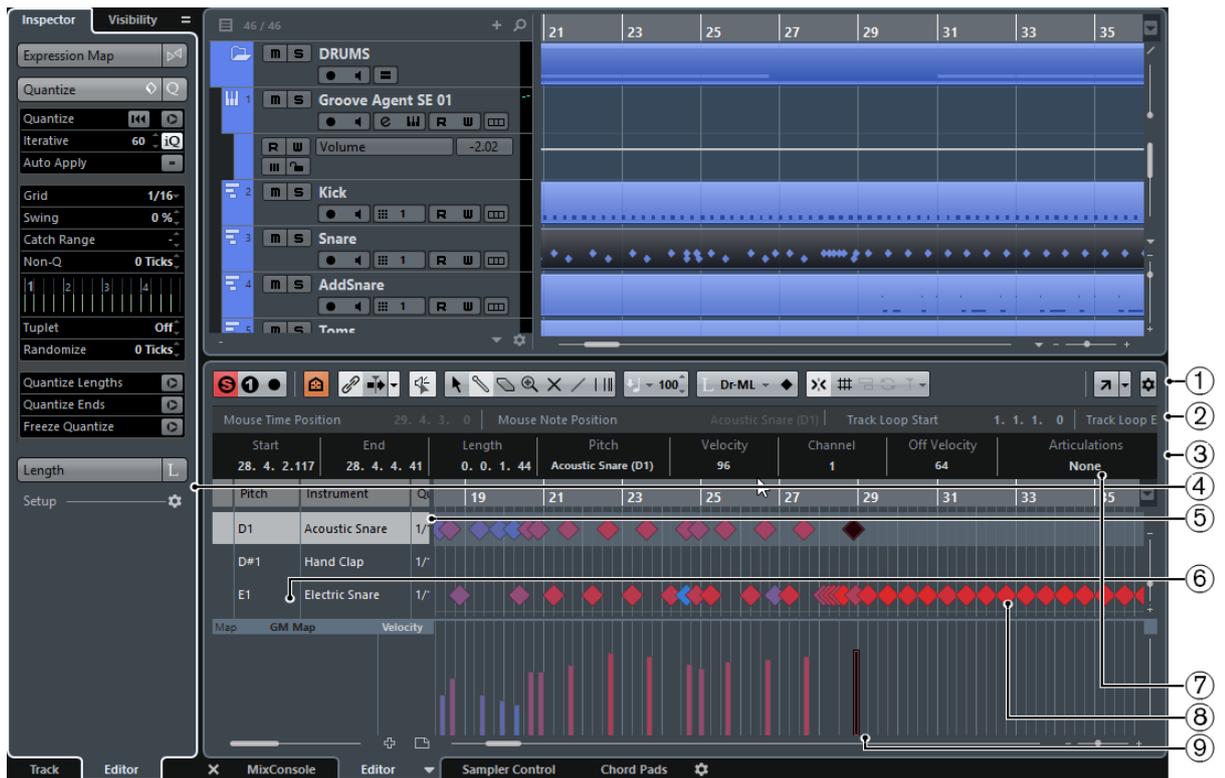
- Double-click a MIDI part in the **Project** window.
- Select a MIDI part in the **Project** window and press **Return** or **Ctrl/Cmd-E**.
- Select a MIDI part in the **Project** window and select **MIDI > Open Drum Editor**.
- In the **Key Commands dialog** in the **Editors** category, assign a key command for **Open Drum Editor**. Select a MIDI part in the **Project** window and use the key command.

NOTE

If you select **MIDI > Set up Editor Preferences**, the **Preferences** dialog opens on the **Editors** page. Make your settings to specify, if you want the **Drum Editor** to open in a separate window or in the lower zone of the **Project** window.



Drum Editor Window



Drum Editor in Lower Zone

The **Drum Editor** is divided into several sections:

1. **Toolbar**
Contains tools and settings.
2. **Status line**
Informs about the mouse time position and the mouse note position.

3. **Info line**
Displays information about the selected event.
4. **Inspector**
Contains tools and functions for working with MIDI data.
5. **Drum sound list**
Lists all drum sounds.
6. **Drum map**
Lets you select the drum map for the edited track or a list of drum sound names.
7. **Ruler**
Displays the time line.
8. **Note display**
Contains a grid in which notes are displayed.
9. **Controller display**
The area below the note display consists of one or multiple controller lanes.

NOTE

You can activate/deactivate the status line, the info line, and the controller lanes by clicking **Set up Window Layout** on the toolbar and activating/deactivating the corresponding options.

Toolbar

The toolbar contains tools and various settings for the **Drum Editor**.

- To show or hide the toolbar elements, right-click the toolbar and activate or deactivate the elements.

Static Buttons

Solo Instrument (Requires Drum Map)



Solos the instrument during playback.

NOTE

This only works if there is a drum map assigned.

Solo Editor



Solos the editor during playback if the editor has the focus.

Record in Editor



Enables the recording of MIDI data in the editor if the editor has the focus.

NOTE

This only works if **MIDI Record Mode** is set to **Merge** or **Replace**.

Left Divider

Left Divider



Allows you to use the left divider. Tools that are placed to the left of the divider are always shown.

Drum Sound Visibility

Drum Visibility Agents



Allows you to determine which drum sounds are displayed in the drum sound list.

Auto-Scroll

Link Project and Lower Zone Editor Cursors



Links timelines, cursors and zoom factors of the lower zone editor and the **Project** window.

NOTE

You cannot activate **Link Project and Lower Zone Editor Cursors** if **Independent Track Loop** is active.

Auto-Scroll



Keeps the project cursor visible during playback. The **Switch Auto-Scroll Settings** pop-up menu allows you to activate **Page Scroll** or **Stationary Cursor** and to activate **Suspend Auto-Scroll when Editing**.

Switch Auto-Scroll Settings



Allows you to specify the auto-scroll settings.

Tool Buttons

Object Selection



Allows you to select events.

Drumstick



Allows you to draw events.

Erase



Allows you to delete events.

Zoom



Allows you to zoom in/out. Hold **Alt** and click to zoom out.

Mute



Allows you to mute events.

Line



Allows you to create a series of contiguous events.

Time Warp (Cubase Pro only)



Allows you to drag a musical position to a certain position in time.

Acoustic Feedback

Acoustic Feedback



Automatically plays back events when you move or transpose them, or when you create them by drawing.

Auto Select Controllers

Auto Select Controllers



Automatically selects controller data of the selected MIDI notes.

Independent Track Loop

Independent Track Loop



Activates/Deactivates the independent track loop.

NOTE

If you activate **Independent Track Loop**, the **Link Project and Lower Zone Editor Cursors** function is automatically deactivated in the lower zone editor.

Multiple Part Controls

Show Part Borders



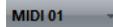
Shows/Hides part borders for the active MIDI part, within the left and right locators.

Edit Active Part Only



Restricts editing operations to the active part.

Currently Edited Part



Lists all parts that were selected when you opened the editor, and allows you to activate a part.

Insert Velocity

Insert Velocity



Allows you to specify a velocity value for new notes.

Notes Length

Insert Length



Allows you to determine a length for newly created notes.

Show Note Length On/Off



Shows drum notes as boxes that display the note length.

Nudge Palette

Trim Start Left



Increases the length of the selected event by moving its start to the left.

Trim Start Right



Decreases the length of the selected event by moving its start to the right.

Move Left



Moves the selected event to the left.

Move Right



Moves the selected event to the right.

Trim End Left



Decreases the length of the selected event by moving its end to the left.

Trim End Right



Increases the length of the selected event by moving its end to the right.

Transpose Palette

Move Up



Transposes the selected event up by a half note.

Move Down



Transposes the selected event down by a half note.

Move Up More



Transposes the selected event up by an octave.

Move Down More



Transposes the selected event down by an octave.

Snap

Snap On/Off



Activates/Deactivates the snap function.

Snap Type



Allows you to select one of the following snap types:

- **Grid**  snaps events to the grid that is selected in the **Quantize Presets** pop-up menu.
- **Grid Relative**  keeps the relative positions when snapping events to the grid.
- **Events**  snaps events to the start or end of other events.
- **Shuffle**  changes the order of events if you drag one event to the left or right of other events.
- **Magnetic Cursor**  snaps events to the cursor position.
- **Grid + Cursor**  snaps events to the quantize grid that is selected in the **Quantize Presets** pop-up menu or to the cursor position.
- **Events + Cursor**  snaps events to the start or end of other events or to the cursor position.
- **Grid + Events + Cursor**  snaps events to the quantize grid that is selected in the **Quantize Presets** pop-up menu, to the start or end of other events or to the cursor position.

Quantize

Iterative Quantize On/Off



Activates/Deactivates iterative quantize.

Quantize Presets



Allows you to select a quantize or a groove preset.

Apply Quantize



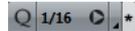
Applies the quantize settings.

Open Quantize Panel



Opens the **Quantize Panel**.

Use Global Quantize



Applies the global quantize setting to drum notes.

Step/MIDI Input

Step Input



Activates/Deactivates MIDI step input.

MIDI Input/Note Expression MIDI Input



Activates/Deactivates MIDI input and note expression MIDI input.

Move Insert Mode



Moves all note events to the right of the step input position to the right to make room for the inserted event when you insert notes.

NOTE

This only works if **Step Input** is activated.

Record Pitch



Includes the pitch when you insert notes.

Record NoteOn Velocity



Includes the NoteOn velocity when you insert notes.

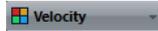
Record NoteOff Velocity



Includes the NoteOff velocity when you insert notes.

Event Colors

Event Colors



Allows you to select event colors.

Edit VST Instrument

Edit VST Instrument



Opens the VST Instrument that the track is routed to.

Right Divider

Right Divider



Allows you to use the right divider. Tools that are placed to the right of the divider are always shown.

Window Zone Controls

Open in Separate Window



This button is available in the lower zone editor. It opens the editor in a separate window.

Open in Lower Zone



This button is available in the editor window. It opens the editor in the lower zone of the **Project** window.

Set up Window Layout



Allows you to set up the window layout.

Set up Toolbar



Opens a pop-up menu where you can set up which toolbar elements are visible.

Status Line

The status line is displayed below the toolbar. It displays important mouse information.

To show or hide the status line, click **Set up Window Layout** on the toolbar, and activate or deactivate **Status Line**.

Mouse Time Position 1. 3. 1. 0 | Mouse Note Position Side Stick (C#1) | Track Loop Start 3. 3. 1. 0 | Track Loop End 1. 1. 1. 0

The on/off status of the status line in the **Drum Editor** window and in the lower zone editor are independent of each other.

Mouse Time Position

Displays the exact time position of the mouse pointer, depending on the selected ruler display format. This lets you edit or insert notes at exact positions.

Mouse Note Position

Displays the exact pitch of the mouse pointer position. This facilitates finding the right pitch when entering or transposing notes.

Track Loop Start/Track Loop End

If **Independent Track Loop** is activated on the toolbar and you set up a loop, the start/end position are displayed.

RELATED LINKS

[Toolbar](#) on page 723

Info Line

The info line shows values and properties of the selected events. If several notes are selected, the values for the first note are displayed in color.

To show or hide the info line, click **Set up Window Layout** on the toolbar, and activate or deactivate **Info Line**.

Start	End	Length	Pitch	Velocity	Channel	Off Velocity	Articulations	Release Length	Voice	Text
6. 4. 1. 0	6. 4. 2. 0	0. 0. 1. 0	Vibraslap (Bb2)	56	10	60	None	0. 0. 0. 0	--	

Length and position values are displayed in the selected ruler display format.

The on/off status of the info line in the **Drum Editor** window and in the lower zone editor are independent of each other.

RELATED LINKS

[Editing Note Events on the Info Line](#) on page 675

Drum Editor Inspector

The Inspector is located to the left of the note display. The inspector contains tools and functions for working with MIDI data.



Expression Map

Allows you to load an expression map. Expression maps are useful for working with articulations.

Quantize

Allows you to access the main quantize parameters. These are identical with the functions on the **Quantize Panel**.

Length

Contains length-related options, similar to the **Functions** submenu of the **MIDI** menu.

- To change the length of the selected MIDI events or all events of the active part if no events are selected, use the **Scale Length/Scale Legato** slider. At the maximum value the notes reach the beginning of the next note.
- To make the new length settings permanent, click **Freeze MIDI Lengths** to the right of the **Scale Length/Scale Legato** slider.
- To fine-tune the distance between consecutive notes, use the **Overlap** slider. At **0 Ticks**, the **Scale Length/Scale Legato** slider extends each note so that it reaches the next note exactly. Positive values cause the notes to overlap and negative values allow you to define a small gap between the notes.
- To use the **Legato** function or slider to extend a note until the next selected note, activate **Between Selected**. This is identical with activating the **Legato Mode: Between Selected Notes Only** option in the **Preferences** dialog.

Setup

Allows you to open the **Editor Inspector Settings** dialog. Click **Setup Inspector** , and from the pop-up menu select **Setup**.

NOTE

These sections are also featured by the editor **Inspector** for the editor in the lower zone.

RELATED LINKS

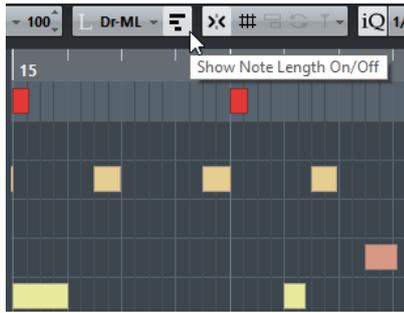
- [Expression maps \(Cubase Pro only\)](#) on page 760
- [Setting up the Note Expression Inspector Section](#) on page 774
- [Quantize Panel](#) on page 245
- [Transpose Functions](#) on page 277
- [Other MIDI functions](#) on page 666
- [Opening the Editor Inspector](#) on page 58

Note Display

The note display of the **Drum Editor** contains a grid in which note events are shown.



The notes are displayed as diamond symbols. If you activate **Show Note Length On/Off** on the toolbar, notes are displayed as boxes and show the note length.



The vertical position of the notes corresponds to the drum sound list to the left, while the horizontal position corresponds to the note's position in time.

RELATED LINKS

[Toolbar](#) on page 723

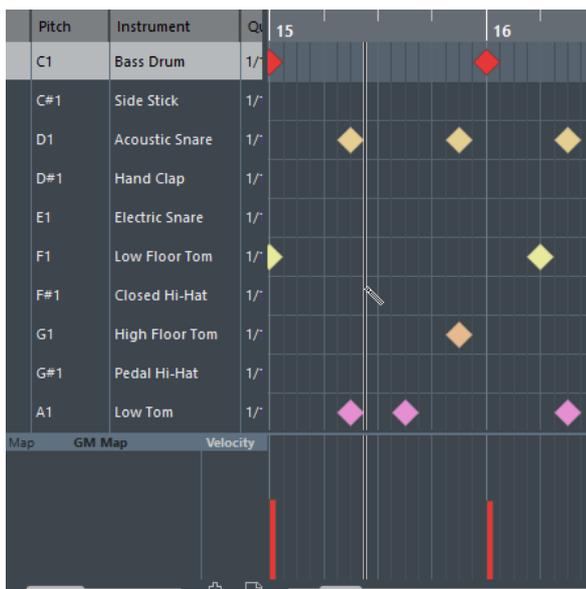
Controller Display

The area at the bottom of the **Drum Editor** window is the controller display.

It consists of one or several controller lanes that show one of the following properties or event types:

- Velocity values of the notes
- Pitchbend events
- Aftertouch events
- Poly Pressure events
- Program Change events
- System Exclusive events
- Any type of continuous controller event

Velocity values are shown as vertical bars in the controller display. Each velocity bar corresponds to a note in the note display. Higher bars correspond to higher velocity values.



Events other than velocity values are shown as blocks. The block corresponds to the event values. The beginning of an event is marked by a curve point.

When you select a line in the drum sound list, only the velocity controller events that belong to the note events on this line are displayed in the controller display.

If you select more than one line in the drum sound list, the controller lane shows all velocity controller events for all notes on the selected lines. This is useful when you have to adjust the controller values between different drum sounds.

NOTE

Unlike note events, controller events have no length. The value of a controller event in the display is valid until the beginning of the next controller event.

Drum Sound List

The drum sound list lists all drum sounds by name and lets you adjust and manipulate the drum sound setup in various ways.

Pitch	Instrument	Quantize	Mute	I-Note	O-Note	Chan	Output
C1	Bass Drum	1/16		C1	C1	10	Track
C#1	Side Stick	1/16		C#1	C#1	10	Track
D1	Acoustic Snare	1/16	●	D1	D1	10	Track
D#1	Hand Clap	1/16		D#1	D#1	10	Track
E1	Electric Snare	1/16	●	E1	E1	10	Track
F1	Low Floor Tom	1/16		F1	F1	10	Track
F#1	Closed Hi-Hat	1/16		F#1	F#1	10	Track
G1	High Floor Tom	1/16		G1	G1	10	Track
G#1	Pedal Hi-Hat	1/16		G#1	G#1	10	Track
A1	Low Tom	1/16		A1	A1	10	Track

Map GM Map Velocity

NOTE

The number of columns in the list depends on whether a drum map is selected for the track or not.

Pitch

Note number of the drum sound.

Instrument

Name of the drum sound.

Quantize

This is used when entering and editing notes.

Mute

Allows you to mute drum sounds.

I-Note

Input note for the drum sound. When you play this note, it is mapped to the corresponding drum sound and automatically transposed according to the **Pitch** setting for the sound.

O-Note

The MIDI output note that is sent out every time the drum sound is played back.

Chan

The MIDI channel, on which the drum sound is played back.

Output

MIDI output on which the drum sound is played back.

RELATED LINKS

[Muting Notes and Drum Sounds](#) on page 738

[Drum Maps](#) on page 738

Drum Sound Visibility

The **Drum Visibility Agents** on the drum editor toolbar allow you to determine which drum sounds are shown in the drum sound list.



- To open the visibility agents, click **Drum Visibility Agents** on the toolbar.

Show All Drum Sounds

Shows all drum sounds as defined in the selected drum map.

NOTE

In this mode, you can edit the order of the drum sound list manually.

Show Drum Sounds with Events

Shows only the drum sounds for which events are available in the selected MIDI part.

Show Drum Sounds in use by Instrument

Shows all drum sounds for which a pad etc. is in use for the instrument. This option is only available if the instrument can provide this information.

Reverse Drum Sound List

Reverses the order of the sounds displayed in the drum sound list.

Drum Map and Names Menus

Below the drum sound list are pop-up menus that are used for selecting a drum map for the edited track or, if no drum map is selected, a list of drum sound names.



RELATED LINKS

[Drum Maps](#) on page 738

Drum Editor Operations

This section describes the general editing operations within the **Drum Editor**.

Inserting Note Events

You can insert note events with the **Object Selection** tool or the **Drumstick** tool.

PREREQUISITE

You have set up the **Insert Length** on the toolbar to determine the length of the inserted note. If **Insert Length** is set to **Drum-Map Link**, the note gets the length of the quantize value for the drum sound. You have activated **Snap** to snap to positions according to the quantize value set for the sound in the drum sound list.

NOTE

If you want to snap positions according to the **Quantize** setting on the toolbar, activate **Use Global Quantize**.

PROCEDURE

- Perform one of the following actions:
 - Select the **Object Selection** tool and double-click in the event display.
 - Select the **Drumstick** tool and click in the event display.

NOTE

To temporarily switch from the **Object Selection** tool to the **Drumstick** tool, hold down **Alt**.

RESULT

A note event is inserted.

Inserting Multiple Note Events

You can insert multiple note events of the same pitch with the **Object Selection** tool or the **Drumstick** tool.

PREREQUISITE

You have set up the **Insert Length** on the toolbar to determine the length of the inserted note. If **Insert Length** is set to **Drum-Map Link**, the note gets the length of the quantize value for the drum sound. You have activated **Snap** to snap to positions according to the quantize value set for the sound in the drum sound list.

NOTE

If you want to snap positions according to the **Quantize** setting on the toolbar, activate **Use Global Quantize**.

PROCEDURE

- Perform one of the following actions:
 - On the toolbar, select the **Object Selection** tool, double-click in the event display and drag to the right.

- On the toolbar, select the **Drumstick** tool, click in the event display and drag to the right.

RESULT

The note events are inserted.

RELATED LINKS

[Toolbar](#) on page 723

Modifying Note Values while Inserting Notes

When inserting note events, you can modify specific note values on the fly.

- To edit the note velocity, drag upwards or downwards.
- To edit the note pitch, hold down **Alt** and drag upwards or downwards.
- To edit the note length, drag to the left or to the right.

NOTE

If you want to edit the note length in the **Drum Editor**, you must deactivate **Snap** and activate **Show Note Length On/Off**. Otherwise, the note is repeated.

- To edit the time position, hold down **Shift** and drag to the left or to the right.

NOTE

You can activate/deactivate **Snap** temporarily by holding down **Ctrl/Cmd**.

Changing the Note Length

You can change the note length in the drum editor with the **Object Selection** tool or with the **Drumstick** tool.

PREREQUISITE

You have activated **Show Note Length On/Off** on the drum editor toolbar.

PROCEDURE

1. Move the mouse pointer to the beginning or the end of the note that you want to edit. The mouse pointer turns into a double arrow.
2. Drag to the left or to the right to adjust the length. An info box with the current length value is displayed.
3. Release the mouse button.

RESULT

The note length is changed. **Snap** is taken into account.

Deleting Note Events

PROCEDURE

- Perform one of the following actions:
 - Select the **Erase** tool and click the event.
 - Select the **Object Selection** tool and double-click the event.

- Select the **Drumstick** tool and click the event.
-

RESULT

The note event is deleted.

Deleting Multiple Note Events

You can delete multiple note events of the same pitch with the **Object Selection** tool or the **Drumstick** tool.

PREREQUISITE

To delete multiple note events with the **Object Selection** tool, **Snap** must be activated.

PROCEDURE

- Perform one of the following actions:
 - On the toolbar, select the **Object Selection** tool, double-click the first event you want to delete and drag to the right.
 - On the toolbar, select the **Drumstick** tool, and click the first event you want to delete and drag to the right.
-

RESULT

The note events are deleted.

Moving and Transposing Note Events

There are several options to move and transpose note events.

- To move note events in the editor, select the **Object Selection** tool and drag them to a new position.
All selected note events are moved, maintaining their relative positions. **Snap** is taken into account.
- To allow only horizontal or only vertical movement, hold down **Ctrl/Cmd** while dragging.
- To move note events via the **Nudge Palette** buttons on the toolbar, select the note events and click a **Nudge Palette** button.
This moves the selected note events by the amount that is set on the **Quantize** pop-up menu.
- To move note events to the project cursor position, select the note events and select **Edit > Move to > Cursor**.
- To move a note event via the info line, select a note event and edit the **Position** or **Pitch** on the info line.
- To transpose note events, select the note events and use the **Transpose Palette** buttons on the toolbar or the **Up Arrow/Down Arrow** keys.
Transpose is also affected by the global transpose setting.
- To transpose note events via the **Transpose Setup** dialog, select the note events and select **MIDI > Transpose Setup**.
- To transpose note events in steps of one octave, press **Shift** and use the **Up Arrow/Down Arrow** keys.

NOTE

- When you move selected note events to a different position, any selected controllers for these note events move accordingly.
- You can also adjust the position of note events by quantizing.

RELATED LINKS

[Transpose](#) on page 661

Muting Notes and Drum Sounds

IMPORTANT

The mute state for drum sounds is part of the drum map. All other tracks using this map are affected.

- To mute individual notes, click or enclose them with the **Mute** tool, or select **Edit > Mute**.
- To mute a drum sound in a drum map, click in the **Mute** column for the drum sound.

Pitch	Instrument	Quantize	Mute	I-Note	O-Note	Chan	Output
C#2	Crash Cymbal 1	1/16	●	C#2	C#2	10	Track
D2	High Tom	1/16		D2	D2	10	Track
D#2	Ride Cymbal 1	1/16	○	D#2	D#2	10	Track
F2	Chinese Cymbal	1/16		F2	F2	10	Track

- To mute all other drum sounds, click **Solo Instrument (Requires Drum Map)** on the toolbar.

RELATED LINKS

[Selecting a Drum Map for a Track](#) on page 741

Drum Maps

A drum kit in a MIDI instrument is most often a set of different drum sounds with each sound placed on a separate key. For example, the different sounds are assigned to different MIDI note numbers. One key plays a bass drum sound, another a snare, and so on.

Different MIDI instruments often use different key assignments. This can be troublesome if you have made a drum pattern using one MIDI device and then want to try it on another. When you switch devices, it is very likely that your snare drum becomes a ride cymbal or your hi-hat becomes a tom, etc., because the drum sounds are distributed differently in the instruments.

To solve this problem and to simplify several aspects of MIDI drum kits, such as using drum sounds from different instruments in the same drum kit, Cubase features drum maps. A drum map is a list of drum sounds, with a number of settings for each sound. When you play back a MIDI track for which you have selected a drum map, the MIDI notes are filtered through the drum map before they are sent to the MIDI instrument. The map determines which MIDI note number is sent out for each drum sound and which sound is played on the receiving MIDI device.

When you want to try your drum pattern on another instrument, you simply switch to the corresponding drum map, and your snare drum sound remains a snare drum sound.

If you want to have the same drum maps included in your projects, you can load these into the template.

NOTE

Drum maps are saved with the project files. If you have created or modified a drum map, use the **Save** function to save it as a separate XML file to make it available for loading into other projects.

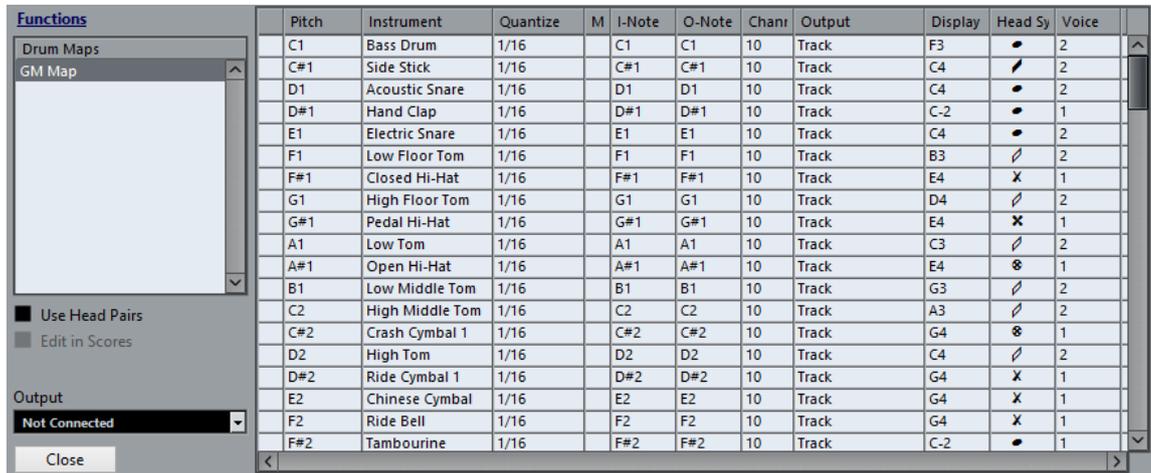
RELATED LINKS

[Saving a Project Template File on page 87](#)

Drum Map Setup Dialog

This dialog allows you to load, create, modify, and save drum maps.

To open the **Drum Map Setup** dialog, select **Drum Map Setup** from the **Map** pop-up menu or the **MIDI** menu.



The list on the left shows the loaded drum maps. The sounds and settings of the selected drum map are displayed on the right.

NOTE

The settings for the drum sounds are the same as in the **Drum Editor**.

Use Head Pairs (Cubase Pro only)

If this option is activated, 2 head symbols for each drum sound are displayed in the drum sound list.

Edit in Scores (Cubase Pro only)

If this option is activated, you can change the settings for the score drum map directly in the score.

Output

Allows you to select the output for the drum map sounds.

Drum Sound List

Lists all drum sounds and their settings. To audition a drum sound, click the leftmost column.

NOTE

If you audition a sound in the **Drum Map Setup** dialog and the sound is set to MIDI output **Default**, the output that is selected on the **Output** pop-up menu in the lower left corner is used. When auditioning a default output sound in the **Drum Editor**, the MIDI output selected for the track is used.

The **Functions** pop-up menu contains the following options:

New Map

Adds a new drum map to the project. The drum sounds are named “Sound 1, Sound 2, etc.” and have all parameters set to default values. The map is named “Empty Map”.

To rename the drum map, click the name in the list and type in a new name.

New Copy

Adds a copy of the selected drum map to create a new drum map. You can then change the drum sound settings of the copy and rename the drum map in the list.

Remove

Removes the selected drum map from the project.

Load

Allows you to load drum maps into your project.

Save

Allows you to save the drum map that is selected in the list on disk. Drum map files have the extension `.drm`.

Edit head pairs

Allows you to customize the note pairs.

RELATED LINKS

[Customizing note head pairs](#) on page 1206

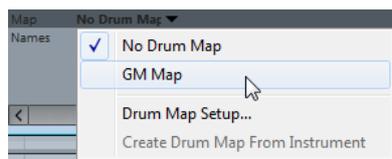
[Drum Map Settings](#) on page 740

[Channel and Output Settings](#) on page 741

Drum Map Settings

A drum map consists of settings for 128 drum sounds, one for each MIDI note number.

- To get an overview of the drum map settings, open the **Drum Editor** and use the **Map** pop-up menu below the drum sound list to select the **GM Map** drum map.



The GM map is set up according to the General MIDI standard.

You can change all drum map settings except the pitch directly in the drum sound list or in the **Drum Map Setup** dialog. These changes affect all tracks that use the drum map.

RELATED LINKS

[Drum Sound List](#) on page 733

[Drum Map Setup Dialog](#) on page 739

Importing Drum Maps from Virtual Instruments

You can import your drum map settings to the VSTi/MIDI track that is routed to Groove Agent SE.

PREREQUISITE

To import your drum map settings to a VSTi/MIDI track the track has to be routed to Groove Agent SE or another drum instrument that supports drum maps.

PROCEDURE

1. Load a drum kit in Groove Agent SE.
 2. In the Inspector for the track, open the **Drum Maps** pop-up menu and select **Create Drum Map from Instrument**.
The drum map is created for the kit that is assigned to the MIDI port and channel selected in the Inspector.
 3. Open the **Drum Maps** pop-up menu again and select **Drum Map Setup**.
 4. In the list on the left, select the kit that you have loaded in the instrument.
-

RESULT

The sounds and settings of the instrument are displayed in the **Drum Map Setup**.

NOTE

Instrument and pattern pads are both exported to the drum map. If they share keys, the pattern pads get priority, that is, their settings are included in the drum map.

Channel and Output Settings

You can set separate MIDI channels and/or MIDI outputs for each sound in a drum map. When a drum map is selected for a track, the MIDI channel settings in the drum map override the MIDI channel setting for the track.

You can select different channels and/or outputs for different sounds. This allows you to construct drum kits with sounds from several different MIDI devices, etc.

- To make a drum sound use the channel of the track, set the channel in the drum map to **Any**.
- To make the sound use the MIDI output that is selected for the track, set the MIDI output for a sound in a drum map to **default**.
- To send the sound to a specific MIDI output, select any other option.
- To select the same MIDI channel or MIDI device for all sounds in a drum map, click in the **Channel** column, press **Ctrl/Cmd**, and select a channel or output.
- If you make specific MIDI channel and output settings for all sounds in a drum map, you can switch between drum maps to send your drum tracks to another MIDI instrument.

Selecting a Drum Map for a Track

- To select a drum map for a MIDI track, open the **Map** pop-up menu in the Inspector or in the **Drum Editor** and select a drum map.
- To deactivate the drum map functionality in the **Drum Editor**, open the **Map** pop-up menu in the Inspector or in the **Drum Editor** and select **No Drum Map**.
Even if you do not use a drum map, you can still separate sounds by name using a name list.

NOTE

Initially, the **Map** pop-up menu only contains **GM Map**.

About I-Notes, O-Notes and Pitches

Going through the following theory helps you make the most out of the drum map concept – especially if you want to create your own drum maps.

A drum map is a kind of filter that transforms notes according to the settings in the map. It does this transformation twice; once when it receives an incoming note that is when you play a note on your MIDI controller, and once when a note is sent from the program to the MIDI sound device.

The following example shows a modified drum map with a bass drum sound that has different pitch, I-note, and O-note values.

Pitch	Instrument	Quantize	Mute	I-Note	O-Note	Chan
C1	Bass Drum	1/16		A1	B0	10
C#1	Side Stick	1/16		C#1	C#1	10
D1	Acoustic Snare	1/16		D1	D1	10

I-Notes (Input Notes)

When you play a note on your MIDI instrument, the program looks for this note number among the I-notes in the drum map. If you play the note A1, the program finds that this is the I-note of the bass drum sound.

This is where the first transformation happens: the note gets a new note number according to the pitch setting for the drum sound. In our case, the note is transformed to a C1 note, because that is the pitch of the bass drum sound. If you record the note, it is recorded as a C1 note.

For example, you can place drum sounds near each other on the keyboard so that they can be easily played together, move sounds so that the most important sounds can be played from a short keyboard, play a sound from a black key instead of a white. If you never play your drum parts from a MIDI controller but draw them in the editor you do not need the I-note setting.

O-Notes (Output Notes)

The next step is the output. This is what happens when you play back the recorded note, or when the note you play is sent back out to a MIDI instrument in realtime (MIDI Thru):

The program checks the drum map and finds the drum sound with the pitch of the note. In our case, this is a C1 note and the drum sound is the bass drum. Before the note is sent to the MIDI output, the second transformation takes place: the note number is changed to that of the O-note for the sound. In our example, the note sent to the MIDI instrument is a B0 note.

The O-note settings let you set things up so that the bass drum sound really plays a bass drum. If you are using a MIDI instrument in which the bass drum sound is on the C2 key, you set the O-note for the bass drum sound to C2. When you switch to another instrument (in which the bass drum is on C1) you want the bass drum O-note set to C1. Once you have set up drum maps for all your MIDI instruments, you can select another drum map when you want to use another MIDI instrument for drum sounds.

Setting Pitches of Notes According to their O-Note Settings

You can set the pitch of notes according to their O-note settings. This is useful if you want to convert a track to a regular MIDI track with no drum map and still have the notes play back the correct drum sound.

It's a typical use case to export your MIDI recording as a standard MIDI file. If you first perform an O-note conversion, you make sure that your drum tracks play back as intended when they are exported.

- To perform an O-note conversion, select **MIDI > O-Note Conversion**.

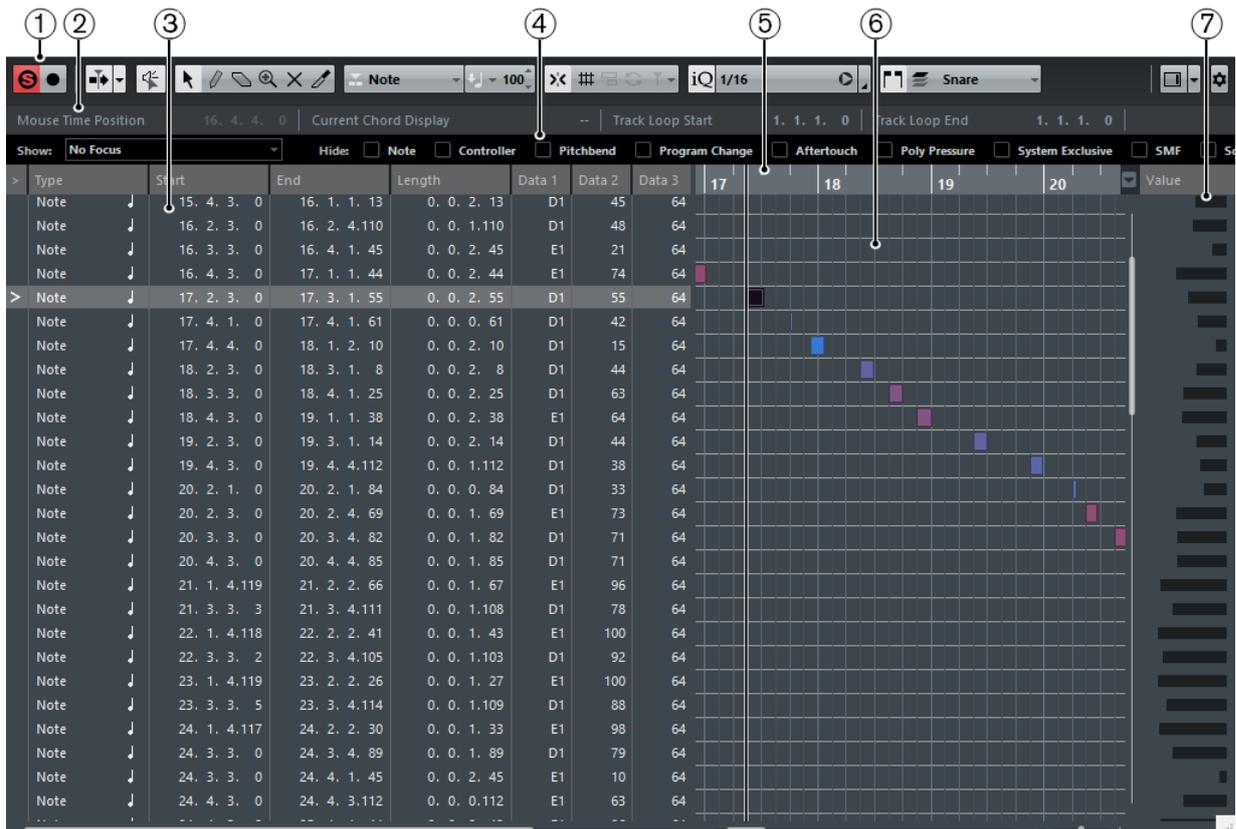
RELATED LINKS

[Exporting and importing standard MIDI files](#) on page 964

List Editor

The **List Editor** shows all events in the selected MIDI parts as a list, allowing you to view and edit their properties numerically. It also allows you to edit SysEx messages.

- To open a MIDI part in the **List Editor**, select a MIDI part in the **Project** window and select **MIDI > Open List Editor**.



The **List Editor** is divided into several sections:

1. Toolbar
2. Status line
3. Event list
4. Filters bar
5. Ruler
6. Event display
7. Value display

NOTE

The filters, the status line, and the value display can be activated/deactivated by clicking **Set up Window Layout** on the toolbar and activating/deactivating the corresponding options.

Toolbar

The toolbar contains tools and various settings for the **List Editor**.

- To show or hide the toolbar elements, right-click the toolbar and activate or deactivate the elements.

Static Buttons

Solo Editor



Solos the editor during playback if the editor has the focus.

Record in Editor



Enables the recording of MIDI data in the editor if the editor has the focus.

NOTE

This only works if **MIDI Record Mode** is set to **Merge** or **Replace**.

Auto-Scroll

Auto-Scroll



Keeps the project cursor visible during playback.

Switch Auto-Scroll Settings



Allows you to specify the auto-scroll settings.

Tool Buttons

Object Selection



Allows you to select events.

Draw



Allows you to draw events.

Erase



Allows you to delete events.

Zoom



Allows you to zoom in/out. Hold **Alt** and click to zoom out.

Mute



Allows you to mute events.

Trim



Allows you to trim events.

Acoustic Feedback

Acoustic Feedback



Automatically plays back events when you move or transpose them, or when you create them by drawing.

Independent Track Loop

Independent Track Loop



Activates/Deactivates the independent track loop.

Multiple Part Controls

Show Part Borders



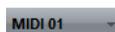
Shows/Hides part borders for the active MIDI part, within the left and right locators.

Edit Active Part Only



Restricts editing operations to the active part.

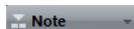
Currently Edited Part



Lists all parts that were selected when you opened the editor, and allows you to activate a part.

Insert Type

Insert Event Type



Allows you to determine an event type for newly created events.

Insert Velocity

Insert Velocity



Allows you to specify a velocity value for new notes.

Nudge Palette

Trim Start Left



Increases the length of the selected event by moving its start to the left.

Trim Start Right



Decreases the length of the selected event by moving its start to the right.

Move Left



Moves the selected event to the left.

Move Right



Moves the selected event to the right.

Trim End Left



Decreases the length of the selected event by moving its end to the left.

Trim End Right



Increases the length of the selected event by moving its end to the right.

Snap

Snap On/Off



Activates/Deactivates the snap function.

Snap Type



Allows you to select one of the following snap types:

- **Grid**  snaps events to the grid that is selected in the **Quantize Presets** pop-up menu.
- **Grid Relative**  keeps the relative positions when snapping events to the grid.
- **Events**  snaps events to the start or end of other events.
- **Shuffle**  changes the order of events if you drag one event to the left or right of other events.
- **Magnetic Cursor**  snaps events to the cursor position.
- **Grid + Cursor**  snaps events to the quantize grid that is selected in the **Quantize Presets** pop-up menu or to the cursor position.
- **Events + Cursor**  snaps events to the start or end of other events or to the cursor position.
- **Grid + Events + Cursor**  snaps events to the quantize grid that is selected in the **Quantize Presets** pop-up menu, to the start or end of other events or to the cursor position.

Quantize

Iterative Quantize On/Off



Activates/Deactivates iterative quantize.

Quantize Presets



Allows you to select a quantize or a groove preset.

Apply Quantize



Applies the quantize settings.

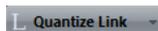
Open Quantize Panel



Opens the **Quantize Panel**.

Length Quantize

Length Quantize



Allows you to set a value for quantizing event lengths.

Step/MIDI Input

Step Input



Activates/Deactivates MIDI step input.

MIDI Input/Note Expression MIDI Input



Activates/Deactivates MIDI input and note expression MIDI input.

Move Insert Mode



Moves all note events to the right of the step input position to the right to make room for the inserted event when you insert notes.

NOTE

This only works if **Step Input** is activated.

Record Pitch



Includes the pitch when you insert notes.

Record NoteOn Velocity



Includes the NoteOn velocity when you insert notes.

Record NoteOff Velocity



Includes the NoteOff velocity when you insert notes.

Event Colors

Event Colors



Allows you to select event colors.

Right Divider

Right Divider



Allows you to use the right divider. Tools that are placed to the right of the divider are always shown.

Edit VST Instrument

Edit VST Instrument



Opens the VST Instrument that the track is routed to.

Window Zone Controls

Show/Hide Right Zone



Allows you to show/hide the right zone.

Set up Window Layout



Allows you to set up the window layout.

Set up Toolbar



Opens a pop-up menu where you can set up which toolbar elements are visible.

RELATED LINKS

[Using the Setup options](#) on page 977

Status Line

The status line is displayed below the toolbar. It displays important information about the mouse position.

To show or hide the info line, click **Set up Window Layout**  on the toolbar, and activate or deactivate **Status Line**.



The on/off status of the status line in the **List Editor** window and in the lower zone editor are independent of each other.

Mouse Time Position

Displays the exact time position of the mouse pointer, depending on the selected ruler display format. This lets you edit or insert notes at exact positions.

Current Chord Display

When the project cursor is positioned over notes that form a chord, this chord is displayed here.

Track Loop Start/End

If **Independent Track Loop** is activated on the toolbar, its start/end position are displayed.

RELATED LINKS

[Toolbar](#) on page 723

Filters Bar

The filters bar allows you to hide events from view, based on their type and other properties.

To show or hide the status line, click **Set up Window Layout** on the toolbar, and activate or deactivate **Filters**.



Show Section

The **Show** section allows you to set up filters.

No Focus

No filter is applied.

Event Types

Only events of the same event type as the selected type will be shown. This is the same as activating event types in the **Hide** section.

Event Types and Data 1

Only events of the same event type as the selected type and with the same **Data 1** value are shown. For example, if a note event is selected, only notes with the same pitch are shown. If a controller event is selected, only controllers of the same type are shown.

Event Channels

Only events with the same MIDI channel value as the selected event are shown.

Presets (Cubase Pro only)

Allows you to use a preset.

Setup (Cubase Pro only)

Opens the **Logical Editor**. Here you can create complex filter settings.

When you apply any of the **Logical Editor** presets or use the **Logical Editor** to create filter settings yourself, only the events that meet the specified criteria are visible.

Hide Section

The **Hide** section allows you to hide specific event types from view.

RELATED LINKS

[Filtering the Event List](#) on page 752

[The Logical Editor](#) on page 830

Event List

The **Event List** lists all events in the selected MIDI parts, in the order in which they are played back from top to bottom. The list allows you to perform detailed numerical editing of the event properties.

The following options are available:

>

An arrow in this column indicates the event that starts closest before the project cursor position. You can use this column for auditioning when you are editing in the list.

- To move the cursor to the start of the event, click in the auditioning column of an event.
- To move the cursor position and start/stop playback, double-click in the column for an event.

Type

Event type. Cannot be changed.

Start

Starting position of the event, displayed in the format selected for the ruler. Changing it has the same effect as moving the event.

NOTE

If you move the event past any other event in the list, the list is resorted. The list always shows the events in the order in which they are played back.

End

Allows you to view and edit the end position of a note event. Editing resizes the note event.

Length

Displays the length of the note event. Changing this resizes the note event and automatically changes the **End** value.

Data 1

Data 1 or **Value 1** property of the event. Its content depends on the event type. For notes, this is the pitch, for example. Where applicable, the values are displayed in the most relevant form. For example, the **Data 1** value for notes is displayed as a note number in the format that was selected in the **Preferences** dialog.

Data 2

Data 2 or **Value 2** property of the event. The content of this depend on the event type. For notes, this is the note-on velocity value, for example.

Data 3

The **Data 3** or **Value 3** property of the event. This value is only used for note events, where it corresponds with the note-off velocity.

Channel

MIDI channel of the event. This setting is normally overridden by the channel setting for the track. To make a MIDI event play back on its own channel, set its track to the Any channel in the **Project** window.

Comment

Allows you to add comments to some event types.

Event Display

The **Event Display** displays events graphically. The vertical position of an event in the display corresponds to its entry in the list, that is, to the playback order. The horizontal position corresponds to the actual event position in the project. In the event display, you can add new parts or events, drag events to another position.

Value Display

The value display to the right of the event display is a tool for quick viewing and editing of multiple values, for example, velocities or controller amounts. The values are shown as horizontal bars, with the bar length corresponding to the value.

To show or hide the value display, click **Set up Window Layout** on the toolbar, and activate or deactivate **Value Display**.



The value that is displayed for an event depends on the event type. The following table shows what is displayed and edited in the **Data** columns and the value display:

Event type	Data 1	Data 2	Value display
Note	Pitch (note number)	Note-on velocity	Velocity
Controller	Controller type	Controller amount	Controller amount
Program Change	Program number	Not used	Program number
Aftertouch	Aftertouch amount	Not used	Aftertouch amount
Pitchbend	Bend amount	Not used	Bend amount
SysEx	Not used	Not used	Not used

NOTE

For note events, there is also a value in the **Data 3** column, which is used for note-off velocity.

NOTE

For SMF and text events, no values are displayed.

List Editor Operations

This section describes the principal editing operations within the **List Editor**.

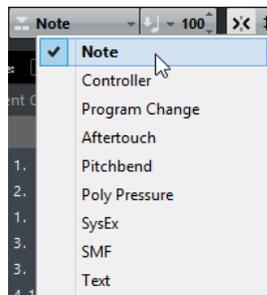
Drawing Events

The **Draw** tool allows you to insert single events in the event display.

When you move the cursor inside the event display, its position is indicated on the status line. The snap function is taken into account.

Mouse Time Position	48. 1. 1. 0	Current Chord Display	--	Track Loop Start	1. 1. 1. 0			
Type	Start	End	Length	Data 1	Data 2	Data 3	48	49
Note	46. 4. 3. 0	47. 1. 1. 37	0. 0. 2. 37	B2	100	64		
Note	47. 1. 1. 0	47. 3. 2. 97	0. 2. 1. 97	Bb2	107	64		
Note	47. 3. 3. 0	47. 4. 1. 36	0. 0. 2. 36	B2	79	64		
Note	47. 4. 1. 0	47. 4. 3. 45	0. 0. 2. 45	Bb2	73	64		
Note	47. 4. 3. 0	48. 2. 3. 42	0. 2. 0. 42	B2	98	64		
Note	48. 2. 3. 0	48. 2. 4. 100	0. 0. 1. 100	F#2	109	64		
Note	48. 3. 1. 0	48. 3. 1. 20	0. 0. 0. 20	F#2	42	64		
Note	48. 3. 1. 0	48. 3. 3. 25	0. 0. 2. 25	G#2	125	64		
Note	48. 3. 3. 0	48. 4. 2. 69	0. 0. 3. 69	B2	100	64		
Note	48. 4. 1. 0	48. 4. 3. 47	0. 0. 2. 47	C#3	125	64		

- To change the event type that you want to draw, select it from the **Insert Event Type** pop-up menu.



- To draw an event, click in the event display.
The note event gets the length that is set on the **Length Quantize** pop-up menu. Notes get the insert velocity value set in the **Insert Velocity** field on the toolbar.
- To draw longer note events, click and drag in the event display.
The length of the event is a multiple of the **Length Quantize** value. If **Length Quantize** is set to **Quantize Link**, the event value is determined by the quantize grid.

Filtering the Event List

You can filter the event list with the **Filters** bar that is displayed below the toolbar in the **List Editor**.

- To filter the event list based on complex criteria, open the **Show** pop-up menu and select a filter.

- To hide an event type, activate the corresponding checkbox on the **Filters** bar.
- To hide all event types except one, press **Ctrl/Cmd** and click the checkbox of the event type that you want to view.
If you **Ctrl/Cmd**-click again, all checkboxes are cleared.

Editing in the Event List

- To edit the values of several events, select the events and edit the value for one event. The values of the other selected events are also changed. Any initial value differences between the events are maintained.
- To set the values of all selected events to the same value, press **Ctrl/Cmd** and edit the value for one event.
- For SysEx events, you can only edit the **Start** position in the list. However, when you click the **Comment** column, the **MIDI SysEx Editor** opens, in which you can perform detailed editing of system exclusive events.

NOTE

When you trim the beginning of a note in the **List Editor**, the note may move to a different position in the list, since other events may begin earlier than the edited event.

RELATED LINKS

[SysEx Messages](#) on page 754

Editing in the Event Display

The event display allows you to edit the events graphically using the tools on the toolbar. You can edit single events as well as several selected events simultaneously.

- To move an event, drag it to a new position.
Moving the event past any other event in the display resorts the list. The list always shows the events in the order in which they are played back. As a result, the vertical position of the event in the display also changes.
- To make a copy of an event, press **Alt** and drag it to a new position.
- To resize a note, select it and drag its end point with the **Object Selection** tool.
- To mute or unmute an event, click on it with the **Mute** tool.
You can mute or unmute several events simultaneously by enclosing them in a selection rectangle with the **Mute** tool.
- You can select a color scheme for the events with the **Event Colors** pop-up menu on the toolbar.
- To delete an event, select it and press **Backspace** or **Delete**, or click on it with the **Erase** tool.

RELATED LINKS

[Coloring Notes and Events](#) on page 672

Editing in the Value Display

- To edit values in the value display, click and drag.
The mouse pointer automatically takes on the shape of the **Draw** tool when you move it over the value display.

SysEx Messages

SysEx (System Exclusive) messages are model-specific messages for setting various parameters of a MIDI device. This makes it possible to address device parameters that would not be available via normal MIDI syntax.

Every major MIDI manufacturer has its own SysEx identity code. SysEx messages are typically used for transmitting patch data, for example, the numbers that make up the settings of one or more sounds in a MIDI instrument.

Cubase allows you to record and manipulate SysEx data in various ways.

RELATED LINKS

[Using MIDI devices](#) on page 649

Bulk Dumps

In any programmable device, the settings are saved as numbers in computer memory. If you change these numbers, you will change the settings. Normally, MIDI devices allow you to dump (transmit) all or some settings in the device's memory in the form of MIDI SysEx messages.

A dump is therefore, among other things, a way of making backup copies of the settings of your instrument: sending such a dump back to the MIDI device restores the settings.

If your instrument allows the dumping of a few or all of its settings via MIDI by activating some function on the front panel, this dump will probably be recordable in Cubase.

Recording a Bulk Dump

IMPORTANT

If your MIDI instrument does not offer a way to initiate a dump, you have to send a Dump Request message from Cubase to start the dump. In that case, use the **MIDI SysEx Editor** to insert the specific Dump Request message (refer to the instrument's documentation) at the beginning of a MIDI track. When you activate recording, the Dump Request message is played back (sent to the instrument), the dump starts and is recorded.

PROCEDURE

1. Do one of the following:
 - On Windows, select **File > Preferences**.
 2. In the **Preferences** dialog, select **MIDI > MIDI Filter**.
 3. In the **Record** section, deactivate the **SysEx** checkbox to make sure that the recording of SysEx data is not filtered.

This way, SysEx messages are recorded but not echoed back to the instrument. This can lead to unpredictable results.
 4. Activate recording on a MIDI track and initiate the dump from the front panel of the instrument.
 5. When you have finished recording, select the new part and select **MIDI > List Editor**.

This allows you to check that the SysEx dump was recorded. There should be one or several SysEx events in the part/event list.
-

Transmitting a Bulk Dump Back to a Device

PREREQUISITE

Route the MIDI track with the System Exclusive data to the device. Check your device's documentation to find details about which MIDI channel should be used, etc.

PROCEDURE

1. Solo the track.
 2. Make sure that the device is set up to receive SysEx messages.
 3. If necessary, put the device in **Standby to Receive System Exclusive** mode.
 4. Play back the data.
-

About Recording and Transmitting Bulk Dumps

- Do not transmit more data than you need. If all you want is a single program, do not send all. Otherwise, it could get too difficult to find the recognized program. Usually, you can specify exactly which data you want to send.
- If you want the sequencer to dump the pertinent sounds to your instrument whenever you load a project, put the SysEx data in a silent count-in before the project itself starts.
- If the dump is very short, which can, for example, be a single sound you can put the dump in the middle of the project to quickly re-program a device. However, you can achieve the same effect by using Program Change. This is definitely preferable, since less MIDI data is sent and recorded. Some devices may be set up to dump the settings for a sound as soon as you select it on the front panel.
- If you create parts with useful SysEx dumps, you can put these on a special muted track. To make use of these parts, drag it to an empty unmuted track and play it back.
- Do not transmit several SysEx dumps to several instruments at the same time.
- Make a note of the current device ID setting of the instrument. If you change this, the instrument may later refuse to load the dump.

Recording SysEx Parameter Changes

Often you can use SysEx to remotely change individual settings in a device, for example, opening a filter, selecting a waveform, changing the decay of the reverb, etc. Many devices are also capable of transmitting changes that are made on the front panel as SysEx messages. These can be recorded in Cubase, and thus incorporated into a regular MIDI recording.

For example: you open up a filter while playing some notes. In that case, you record both the notes and the SysEx messages that are generated when you open the filter. When you play back the recording, the sound changes exactly as it did when you recorded it.

PROCEDURE

1. Select **File > Preferences**.
 2. In the **Preferences** dialog, select **MIDI > MIDI Filter** and make sure that **SysEx** is deactivated in the **Record** section.
 3. Make sure that the instrument is set to transmit changes of front panel controls as SysEx messages.
 4. Record.
-

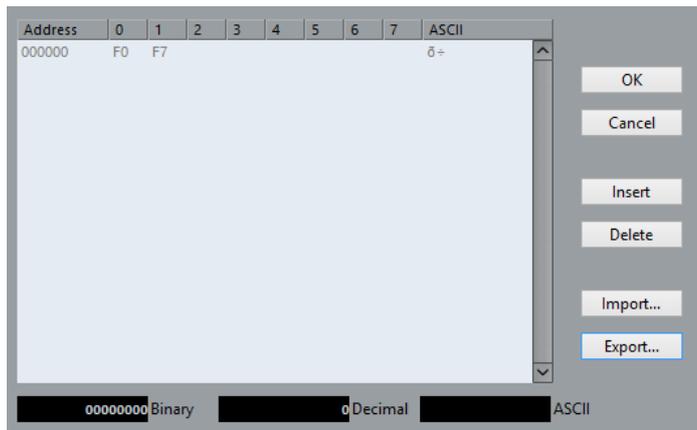
AFTER COMPLETING THIS TASK

In the **List Editor**, check if the events were recorded properly.

MIDI SysEx Editor

While SysEx events are displayed in the **List Editor/Project Browser** (Cubase Pro only), it is not their entire content that is displayed. Only the beginning of the message is displayed in the **Comment** column for the event. The event is not editable. You can only move the event, the same way you would move it in the **List Editor**.

- To open the **MIDI SysEx Editor** for a SysEx event, click in the **Comments** column for the event in the **List Editor/Project Browser**.



The display shows the entire message on one or several lines. SysEx messages always begin with F0 and end with F7 and a number of arbitrary bytes in between. If the message contains more bytes, so that they do not entirely fit on one line, it continues on the next line. The Address indication to the left helps you find out on which position in the message a certain value is located.

You can edit all values except for the first (F0) and the last ones (F7).

In the **MIDI SysEx Editor**, the bytes are displayed as follows:

- In the main display, values are shown in hexadecimal format.
- To the right of the main display, values are shown in ASCII format.
- At the bottom of the dialog, the selected value is shown in ASCII, binary, and decimal formats.

Adding and Deleting Bytes

- To add a byte, open the **MIDI SysEx Editor** and click **Insert**. The byte is added before the selected byte.
- To delete a byte, open the **MIDI SysEx Editor**, select a byte, and click **Delete**.
- To delete the complete SysEx message, select it in the List Editor and press **Delete** or **Backspace**.

Editing Byte Values

You can edit the selected byte value in the main display of the **MIDI SysEx Editor**, or in the ASCII, decimal, and binary displays.

- To edit the selected value, open the **MIDI SysEx Editor**, click on a byte, and type in the value.

Importing and Exporting SysEx Data

You can import SysEx data from disk and export the edited data to a file.

The file has to be in MIDI SysEx (.syx) binary format. Only the first dump in a SYX file will be loaded.

- To import SysEx data, open the **MIDI SysEx Editor** and click **Import**.
- To export SysEx data, open the **MIDI SysEx Editor** and click **Export**.

NOTE

Do not confuse this format with MIDI files, which have the extension .mid.

In-Place Editor

The **In-Place Editor** allows you to edit MIDI notes and controllers directly in the **Project** window, for quick and efficient editing in context with other tracks.



The **In-Place Editor** expands the MIDI track to show a miniature **Key Editor**. When you select a MIDI note, the **Project** window info line shows the same information about the note, as the info line in the **Key Editor**. You can perform the same editing here as in the **Key Editor**.

RELATED LINKS

[Editing Note Events on the Info Line](#) on page 675

Opening the In-Place Editor

- To open the **In-Place Editor** for the selected tracks, select **MIDI > Open In-Place Editor**.
- To open the **In-Place Editor** for a single MIDI track, click **Edit In-Place** in the track list.



Toolbar

The toolbar contains tools and settings for the **In-Place Editor**.

To open the toolbar, click on the triangle in the upper right corner of the track list for the edited track.



Acoustic Feedback

Acoustic Feedback



Automatically plays back events when you move or transpose them, or when you create them by drawing.

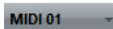
Multiple Part Controls

Edit Active Part Only



Restricts editing operations to the active part.

List of Parts in Editor



Lists all parts that were selected when you opened the editor, and allows you to activate a part.

Indicate Transpositions

Indicate Transpositions



Allows you to display the transposed pitches of MIDI notes.

Auto Select Controllers

Auto Select Controllers



Automatically selects controller data of the selected MIDI notes.

Insert Velocity

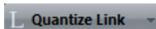
Insert Velocity



Allows you to specify a velocity value for new notes.

Length Quantize

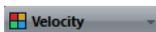
Length Quantize



Allows you to set a value for quantizing event lengths.

Event Colors

Event Colors



Allows you to select event colors.

Transpose Palette

Move Up



Transposes the selected event up by a half note.

Move Down



Transposes the selected event down by a half note.

Move Up More



Transposes the selected event up by an octave.

Move Down More



Transposes the selected event down by an octave.

Working with the In-Place Editor

- To zoom or scroll the **In-Place Editor**, point at the left part of the piano keyboard display so that the pointer changes to a hand. Then drag to the right or left to zoom in or out vertically, and drag up or down to scroll the editor.
- To add or remove controller lanes, right-click below the controller name field and select an option from the context menu.
- To close the **In-Place Editor** for one track, click **Edit In-Place** in the track list or double-click below the controller display in the **In-Place Editor**.
- To open/close the **In-Place Editor** for one or several selected tracks, use the **Edit In-Place** key command.
- You can drag notes from one **In-Place Editor** to another.

NOTE

The **Snap** button and **Snap Type** pop-up menu on the **Project** window toolbar control snapping in the **In-Place Editor**, but the snap grid is set using the **Quantize** pop-up menu.

Expression maps (Cubase Pro only)

Introduction

About articulations

Musical articulations, or expressions, define how certain notes “sound”, i. e. how they are sung or performed on a given instrument. They allow you to specify that a string instrument is bowed (not plucked), a trumpet muted (not played open), and so on. Articulations also define the relative volume of notes (to play some notes louder or softer than the others) or changes in pitch (create a tremolo).

Articulations can be divided into “Directions” and “Attributes”.

- Directions are valid for all notes from the insert position on, until another direction is scored. This means, they are applied not to single notes, but to a continuous range of notes, or even an entire piece of music.

An example for a direction is pizzicato, which means that the string instrument is plucked.

- Attributes belong to single notes. They are only applied to the notes for which they are scored.

Examples for this are accents, where a note is played with an emphasis, and staccato, where a note is played shorter.

Direction	Attribute	Attribute	Attribute
Pizzicato	Tenuto	Accent	Staccato
			

Articulations and MIDI

When working with MIDI, i. e. when you are entering notes via a MIDI keyboard, editing notes in the MIDI editors or using VST instruments, articulations need to be realized as different sounds.

To trigger the necessary sound changes, use the following command and data types:

Program Change

Program Change messages can be used to instruct a connected VST instrument to switch from one program to another. Depending on the instrument, this can be used to play a different articulation.

MIDI channel

Multi-timbral instruments, such as Steinberg's HALion, feature programs, usually representing different articulations. These can be accessed via MIDI channel messages.

Key switches

Some software samplers, like Steinberg's HALion Symphonic Orchestra, make use of "key switches", meaning that certain keys are not used to trigger sounds, but to switch between articulations, for example.

Expression maps

When working on a project, you might want to audition a composition including articulations. In Cubase, this can be achieved using expression maps, which can be selected via the Expression Map section in the Inspector for MIDI or instrument tracks. Within these maps, you can specify the sound mapping and characteristics for all your musical expressions, using the methods described in the table above.

When you select an expression map for a MIDI or instrument track, the articulations (sounds) defined in the map are automatically applied during playback. Cubase recognizes the expressions scored for the MIDI part and searches the sound slots in the expression map for a sound that matches the defined criteria.

When a matching sound slot is found, the current note is either modified (e. g. reduced in length or played louder), or the MIDI channel, program change or key switch information is sent to the connected instrument (the instrument selected on the Output Routing pop-up menu for the track), so that a different sound is played. When no sound slot is found that matches the articulations used in the part, the "closest match" is used.

When you enter articulations in a MIDI part, you need to set up an expression map in a way that the right sounds in the connected VST or MIDI instrument are triggered.

Expression maps also allow you to link your articulations with remote keys on a MIDI input device and map these to sounds that can be played by a MIDI device or VST instrument. This way, you can enter notes and articulations using a remote MIDI device and have these automatically be recorded and played back correctly by Cubase.

Expression maps are useful in the following situations:

- When you want to enter musical articulations directly in one of the MIDI editors, especially the Score Editor, without having to record MIDI data first.
- When you want to play/record music in realtime and control articulation changes while playing.
- When you open and edit projects from other users. By using expression maps, you can map the articulation information to a different instrument set or content library quickly and easily.

NOTE

You can also use the Note Expression functions to add articulations directly on your MIDI notes in the Key Editor.

RELATED LINKS

[Creating and editing expression maps on page 765](#)

[Groups on page 769](#)

[Note Expression on page 772](#)

Using expression maps

Expression maps and their related functions can be found in different locations in Cubase. To be able to use these functions, an expression map or a track preset containing such a map has to be loaded.

Loading expression maps

Expression maps can either be part of track or VST presets, or be saved separately. Depending on this, the way to make them available in Cubase is slightly different.

Loading expression maps that are part of presets

Cubase comes with a set of predefined expression maps which are part of the default presets. They are loaded automatically with the presets.

The following applies:

- Included with Cubase are several track presets which are pre-configured for use with expression maps. They contain sounds that make use of key switches and have different articulations. To indicate that these presets can be used in this context, they have the suffix "VX".
- Track presets for HALion Symphonic Orchestra can also be used with expression maps. The presets are installed automatically with Cubase. However, for them to be available, you have to separately install the VST instrument. These track presets begin with "HSO" and end with "VX".

RELATED LINKS

[Track Presets](#) on page 177

Expression maps that were saved separately

You can also define your own expression maps. To load these, proceed as follows:

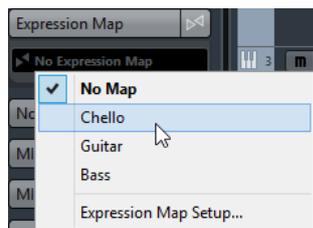
PROCEDURE

1. In the Inspector for the selected track, select the Expression Map section, open the pop-up menu and select "Expression Map Setup...".
The Expression Map Setup window opens.

NOTE

If the Expression Map section is not shown in the Inspector, right-click on another Inspector section and select "Expression Map" from the context menu.

2. In the Expression Maps section on the left, click the Load button.
A file dialog appears.
3. Locate and select an expression map and click Open.
The expression map is added to the Maps list.
4. Repeat the steps for all the maps that you want to make available, and close the dialog.



All loaded maps are available on the Expression Map pop-up menu in the Inspector.

RELATED LINKS

[Creating and editing expression maps](#) on page 765

Expression maps in the Project window

In the Inspector for MIDI and instrument tracks, the Expression Map section is available. This indicates whether an expression map is used for a track. It also shows the sound slots that are active for playback and for realtime input.



1. Indicates that an expression map is used for the track.
2. Shows which remote key is being pressed.
3. Marks the slot that is played back.

The possibility to monitor the active slots is especially useful when recording articulations with an external device, such as a MIDI keyboard. This way, you can see whether the correct sound slot, i. e. the right articulation, is used.

Expression maps in the Score Editor

In the Score Editor, the articulations that are part of an expression map can be inserted like other symbols. There is a special section in the Symbols Inspector, containing all articulation symbols of the current expression map.



- To insert a symbol, click on it in the Expression Map section, and click at the desired position in the note display.
- To delete an articulation symbol from the score, select it and press **Delete** or **Backspace**. You can also click on it with the Eraser tool.

NOTE

In the Preferences dialog (Score-Colors for Additional Meanings page), you can specify a color for Expression Map symbols. This way, you can easily distinguish them from other Score symbols.

Articulation editing in the Score Editor is the same as regular symbol editing.

IMPORTANT

In the Score Editor, it is possible to insert symbols for a single note that in fact cannot be combined in a musically meaningful way. So when entering articulations, make sure that they do not conflict with other articulations.

RELATED LINKS

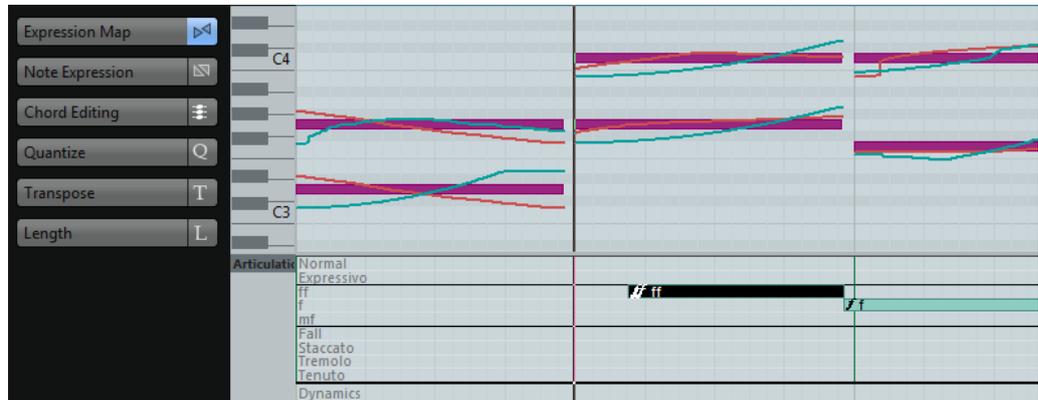
[Working with symbols](#) on page 1124

Expression maps in the Key, Drum, and In-Place Editors

If an expression map is used for a MIDI or instrument track, its articulations are shown in the note events in the Key Editor display, provided that the vertical zoom factor is high enough. If the horizontal zoom factor is high enough, the attribute description (the text in the Description column) is also shown.

You can insert and edit articulations in the Key, Drum, and In-Place Editors using the controller lane. This is much like regular controller lane editing.

- To display the articulations set up in the selected expression map, open the pop-up menu to the left of the lane and select “Articulations/Dynamics”.



- When “Articulations/Dynamics” is selected for a controller lane, the note beginnings are displayed as thin vertical lines in the controller display.
- All articulations that are specified for the selected expression map are available on the controller lane. They appear on different rows one above the other. The order in which they are listed is the same as in the expression map. The different groups (1 to 4) are also reflected here. They are separated by lines. Articulations belonging to the same group are shown in the same color.
- Directions are displayed as bars in the controller lane. They begin at the insertion point of a direction and end at the insertion point of the next articulation from the same group (or at the end of the part if no more directions follow). Attributes are inserted at the note beginning. You can assign a maximum of one attribute per group to each note.

RELATED LINKS

[Editing Articulations](#) on page 768

[Using the Controller Display](#) on page 698

[Editing Dynamics \(Cubase Pro only\)](#) on page 703

[Groups](#) on page 769

Editing on the controller lane

- To insert new directions on the controller lane, select the Draw tool and click at the desired position in the respective row, i. e. where you want the direction to start. Note that you

have to click at the exact position of the first note that you want to apply this articulation to or to the left of it.

Instead of selecting the Draw tool, you can also hold down **Alt** and click at the desired position.

- To insert new attributes on the controller lane, select the Draw tool and click at the respective note line in the corresponding row of the controller lane.

Instead of selecting the Draw tool, you can also hold down a modifier key (by default **Alt**) and click at the desired position.

- To remove a direction, click on it with the Erase tool or select it and press **Delete** or **Backspace**.
- To remove an attribute, click on it with the Draw tool.

Note that you cannot select attributes in the controller lane without automatically selecting the corresponding note, too. Therefore, you cannot delete an attribute by selecting it and pressing **Delete** or **Backspace** without deleting the note as well.

NOTE

If several notes are selected, you can use the Draw tool to insert or delete attributes for all of them in one go.

Editing on the info line

When a MIDI note is selected in the note display, the info line contains the “Articulations” option. This displays the note attributes (symbols) specified for the selected note. Click in this section to open the Articulations pop-up menu.

The following applies:

- All note attributes available in the expression map are shown on the pop-up menu, sorted by group.
- To add an attribute to a note, simply select it on the pop-up menu. Attributes that are active for a note are indicated on the menu.
If you click on an active attribute again on the menu, it is deleted.
- If you select another attribute from the same group for a note, the attribute replaces the previous attribute.

RELATED LINKS

[Groups](#) on page 769

Expression maps in the List Editor

In the List Editor, the Articulations can be viewed and edited in the Comment column. The options are the same as on the Key Editor info line.

Directions can be shown either as Text or as Graphic Symbols (like in the Score Editor). Either way, they are followed by the text “VST Expression” in brackets, so as to be easily recognizable and distinguishable from ordinary Score symbols.

Creating and editing expression maps

Creating an expression map from scratch

PROCEDURE

1. In the Inspector for a MIDI or instrument track, open the Expression Map section, open the pop-up menu and select “Expression Map Setup...”.

The Expression Map Setup window opens, allowing you to load and create expression maps.



NOTE

You can also open the Expression Map Setup window by selecting the “Expression Map Setup...” option on the MIDI menu.

- To create a new map from scratch, click the “+” button at the top of the Maps list in the Expression Maps section of the dialog.
 A new map named “Untitled” is shown in the Expression Maps section.
- Click on the map name and enter a meaningful name (e. g. “Cello” to set up an expression map for a cello).

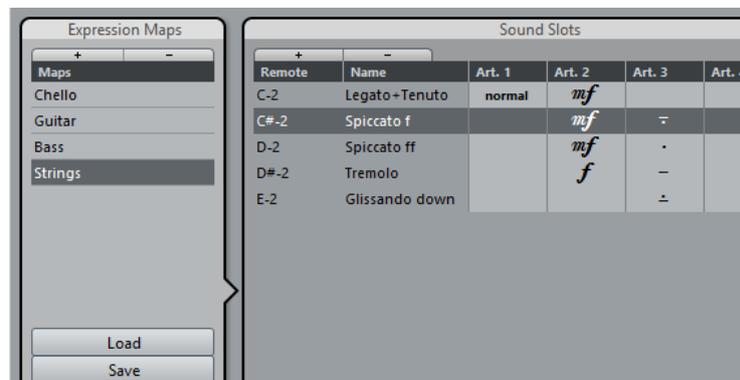
Creating expression maps based on the key switches used in an instrument

You can automatically extract mapping information from your connected VST instruments and convert it into a new expression map. This makes it very easy to set up expression maps for the instruments you often work with.

PROCEDURE

- Load the VST instrument you want to use and assign it to a MIDI or instrument track.
- Select the track, open the Expression Map section in the Inspector, and select “Import Key Switches” on the pop-up menu. Note that this menu option will only be available when the loaded program contains key switches.

The Expression Map Setup window opens.



3. Make the desired settings for the created map and click the Save button.
The expression map is saved and can now be loaded via the pop-up menu on the Expression Map section of the Inspector.
-

RELATED LINKS

[Creating an expression map from scratch](#) on page 765

Adding sound slots

Now, you create one sound slot for each articulation that you want to add.

PROCEDURE

1. In the Sound Slots section to the right of the Maps list, a sound slot is added automatically when a new map is created.
This is the default slot that is used. You can specify an articulation for it or leave it empty, depending on your preferred default setting.
 2. Click in the first Articulation column (Art. 1) for the sound slot and select an articulation from the menu.
A new entry is added in the Articulations section in the lower right corner of the window.
 3. When adding articulations, the name of the sound slot is automatically set to the articulation. To change the name, click in the name field and enter a new name.
The names of the sound slots are displayed in the Inspector for the track.
 4. To create a complex articulation, made of several different single articulations, click in the other Articulation columns (Art. 2-4) for the sound slot and add the corresponding articulations.
For each new articulation, an additional entry is added in the Articulations section.
 - Apart from creating combined articulations, the Articulation columns also allow you to prioritize articulations, by sorting them into different groups.
When the program is looking for sounds and no exact match is found, the group setting defines the “closest match”, i. e. the sound which matches most criteria when searching from left to right is used. For example, if two sounds are found which have the same articulation in group 1, the sound that also matches group 2 is preferred and so on. For more information on groups, see below.
 - If you cannot find the articulation that you want to add on the pop-up menu, you can define your own articulations by selecting “Add Custom Articulation”.
This adds a default articulation which you can define in the Articulations section, see below.
 - Click in the “Col” column to assign a color to the current sound slot.
When working in the MIDI editors, you can color your events according to the color of the sound slots.
 5. When you have made the desired settings, click the “+” button again to add another sound slot.
Add as many sound slots as you need.
In the Remote column, you can specify the key on your external device that triggers this sound slot.
-

RELATED LINKS

[Expression maps in the Project window](#) on page 763

[Remote Settings](#) on page 769

Output Mapping

When you have added sound slots, you can map them to certain sound characters or expressions of an instrument, e. g. a bowed violin or a pizzicato violin. The available sounds depend on the instrument that is selected for the MIDI or instrument track. Some of the more complex virtual instruments require multiple key switches or combinations of key switches and controllers to select a particular articulation. This can be accomplished by stacking multiple output events to a single sound slot. You can add a new slot by clicking the “+” button above the list.

You can make the following settings for the slots: In the Status column, you can specify a note-on, program change, or controller message. Additionally, you can make settings in the Data 1 and 2 columns (if applicable). If you have an instrument that uses key switches (for example Steinberg’s HALion Symphonic Orchestra), you can specify these key switches here. This allows you to switch between a bowed and a pizzicato violin, or to switch to another program containing a different articulation.

You can also create expressions by editing the incoming MIDI data, for example by changing the note length or velocity. For this, you can make the following settings in the lower part of the Output Mapping section:

Channel

Here you can specify the MIDI channel. When using HALion Symphonic Orchestra for example, this allows you to switch to a different program.

Length

Here you can specify the note length. This way, you can create staccato or tenuto sounds.

Velocity

Here you can specify the desired velocity. This allows you to create accents, for example.

Min. Velocity

If you are using an instrument that has different velocity ranges on the same key, you can specify a minimum velocity here, to make sure that the sample mapped to a particular range is used.

Transpose

This allows you to specify a transpose value. This can be used to select different articulations in some sample libraries, in which different articulations are located on different octaves, for example.

Controller 1/2

These allow you to set MIDI Control Change messages and their values for each sound slot.

Editing Articulations

In the Articulations section, the articulations you added for the sound slots are displayed.

The following settings can be made here:

Art.

Clicking in this column opens a context menu, where you can choose whether you want to insert a symbol or a text string. If you select Symbol, the dialog with the available symbols opens. If you select Text, you can directly enter the desired text.

Type

In this column you specify whether you want to add an “Attribute” (which only influences a single note, e. g. an accent) or a “Direction” (which is valid from the insertion position until it is replaced by another articulation, e. g. arco and pizzicato).

Description

Here, you can enter a descriptive text. For example, this can be the name of the symbol (e. g. Accent) or the long name of a direction (e. g. pizz and pizzicato).

Group

This column allows you to specify the group, or importance of the symbol, see below.

Groups

You can sort the different articulations you define for an expression map into one to four groups. Groups can be used to combine directions and attributes in more complex musical expressions by choosing articulations from the different groups, for example to play a note arco AND staccato AND with an accent.

The groups themselves are exclusive. This means articulations residing within the same group cannot be used together. Since some of the articulations cannot be combined – for example, a violin cannot be played arco (bowed) and pizzicato (plucked) at the same time – these articulations should be placed in the same group.

Furthermore, the groups represent the musical importance, with group 1 having the highest priority (expressions in group 1 are more important than those in group 2, 3, and 4). This setting is required when the expression map does not find an exact match for your data and tries to identify the closest possible sound. Let’s say you have added a staccato symbol and an accent to a note in an editor. In the expression map, you have specified that staccato is in group 2 and the accent is in group 3. The connected instrument, however, does not have a sample that corresponds to these settings. In this case, the program looks for a staccato sound, disregarding the accent.

Remote Settings

The remote settings allow you to specify if you want to use key switches or program change messages to play a certain sound slot.

Active remote keys are indicated in the **Inspector** for the track.

NOTE

If you do not plan to record or trigger articulations via a MIDI input device, you do not need to specify remote keys.

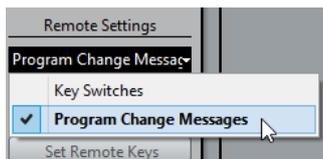
RELATED LINKS

[Expression maps in the Project window](#) on page 763

Program Change Messages

You can use program change messages to switch sound slots.

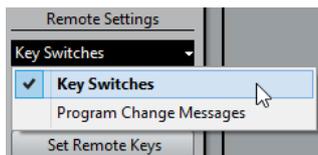
- In the **Remote Settings** section of the **Expression Map Setup** dialog, select **Program Change Messages** from the pop-up menu.



Key Switches

You can use key switches to switch sound slots.

- In the **Remote Settings** section of the **Expression Map Setup** dialog, select **Key Switches** from the pop-up menu.



If you use key switches, these keys are used to insert articulations instead of notes.

Latch Mode

This setting determines whether the remote key function reacts to note-off messages.

- If Latch Mode is deactivated, the key you press on your MIDI input device is valid for as long as the key is held, i. e. the sound slot plays until the key is released. On release, the default (first) sound slot is played again.
- If Latch Mode is activated, the key you press is valid until the next key is pressed.

IMPORTANT

Note that Latch Mode can only be generally activated/deactivated in Cubase, not for single expression maps.

Root Note

Here, you can specify the first key on your external device that you want to use as a remote key. This is useful, since it allows you to automatically adjust existing remote key assignments to suit your needs, for example when you are using a MIDI keyboard with a very wide or very narrow key range.

Set Remote Keys

Remote keys can be specified manually for each slot in the Sound Slots section of the window. However, you can also automatically assign a range of keys on your external device to the sound slots in the expression map.

PROCEDURE

1. Click the Set Remote Keys button.
A dialog opens.
 2. Use the Start Key field to specify the first key on the MIDI input device that you want to trigger a sound slot.
 3. On the Key Mapping pop-up menu, you can specify with which keys on your device you want to trigger the sound slots.
You can choose whether you want to use all keys on the keyboard as remote keys, or whether only the white or black keys are used.
 4. Click OK to close the dialog.
-

Saving your settings

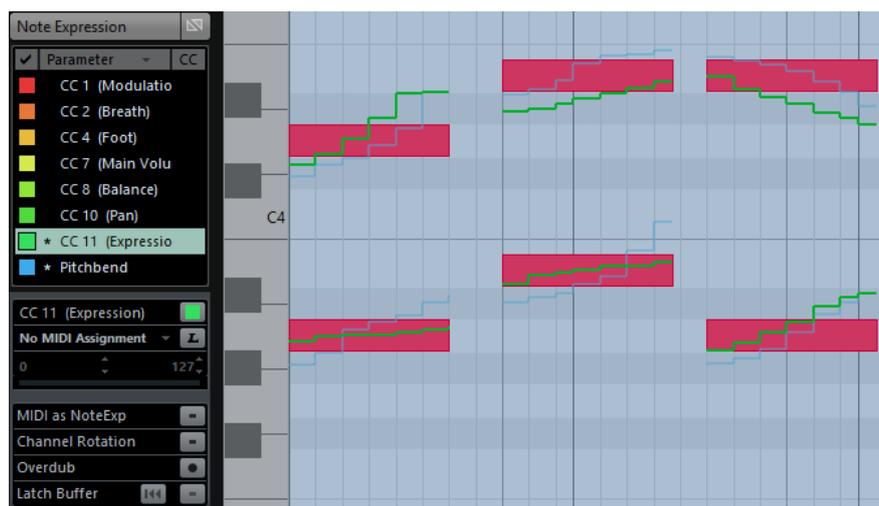
When you have made the desired settings, you need to save the expression map. To do so, click the Save button in the Expression Maps section of the window, specify a file name and a location for the expression map, and click Save.

Note Expression

Introduction

Note Expression offers a very intuitive way of controller editing in Cubase. As an alternative to working with controller lanes in the Key Editor, controller data can be viewed and edited directly on the associated MIDI note events in the event display.

With Note Expression, a note and its associated controller data are treated as a unit. When you quantize, move, copy, duplicate, or delete notes, all their associated controller information will follow. This allows for a very intuitive and accurate editing of note-related data. The Note Expression values can be edited in various ways. Furthermore, by superimposing the corresponding data curves in the event display, you can view all the Note Expression data for a note simultaneously, which gives you a good overview.



Note Expression curves in the Key Editor

When working with Note Expression, it is important to distinguish between VST 3 controllers and MIDI controllers.

RELATED LINKS

[Editing Note Expression data on page 780](#)

VST 3 controllers

VST 3 controllers are provided by the VST instrument. Therefore, different controllers can be available, depending on the instrument.

VST 3 controllers provide articulation information for each individual note. Unlike MIDI controllers (which are channel-specific), VST 3 controllers are note-specific and are suitable for polyphonic contexts. Articulating each note in a chord individually creates a much more natural

feel. Furthermore, VST 3 controllers allow for a value range that exceeds the MIDI range of 0 to 127, which offers a more comfortable value editing and fine-tuning.

To be able to work with VST controllers, you need a VST instrument that offers this kind of controller parameters and is capable of playing back these controller messages. Included with Cubase is HALion Sonic SE, which is compatible with Note Expression.

RELATED LINKS

[HALion Sonic SE](#) on page 788

MIDI controllers

A major limitation of MIDI is the nature of controller information. With the exception of poly pressure, controller messages are channel-specific messages, i. e., they affect the entire instrument, regardless of whether they are inserted for a part or a note.

Therefore, when using Note Expression with MIDI instruments (hardware or VSTi), it is important to understand that articulation data on one note usually also affects all other notes of the same voice, i. e. any other note playing on the same channel at the same time. This limits the potential of Note Expression for MIDI controller events to monophonic (solo) performances. When using MIDI controllers in polyphonic performances, we recommend using controller lanes in the Key Editor.

However, Note Expression can be useful in the context of standard VST instruments and MIDI hardware instruments.

RELATED LINKS

[Using the Controller Display](#) on page 698

[Recording MIDI controllers as Note Expression data](#) on page 786

[Converting MIDI Controllers into Note Expression data](#) on page 787

Working with Note Expression

When working with Note Expression, start by activating the “Show Note Expression Data” button on the Key Editor toolbar. This will give you a visual feedback of your actions. Use the slider to the right of the button to modify the display size of the Note Expression data in the event display.



- If you want to listen to your editing, activate the Acoustic Feedback button on the Key Editor toolbar.
Playback is triggered when you enter or change Note Expression data. All controllers that are present at the mouse position will be used during playback.

Note Expression can be used in the following ways:

- You can record notes live into Cubase while attaching some or all of the used controllers as Note Expression events to the notes.
- You can replace the existing Note Expression data of a MIDI part by recording Note Expression events for the MIDI notes during playback.
- You can add Note Expression data to one MIDI note after another using the “Note Expression MIDI Input” button.
- You can draw in Note Expression events for MIDI notes in the Note Expression event editor.

RELATED LINKS

[Recording](#) on page 777

[Overdubbing](#) on page 778

[Recording Note Expression data via MIDI input](#) on page 779

[Editing Note Expression data](#) on page 780

Setting up the Note Expression Inspector Section

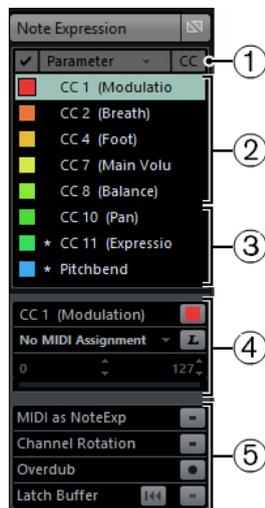
To be able to work with Note Expression, you have to set up the parameters first. This is done in the Note Expression section in the Inspector of the Project window or the Key Editor.

The top area of the Note Expression section shows a list of parameters. The VST 3 controllers are shown first, followed by the MIDI controllers. Which VST 3 controllers are available depends on the instrument that is used. The MIDI controllers can be set up in the MIDI Controller Setup dialog.

NOTE

If many controllers are available, you may have to navigate through the list using the scrollbar.

If an asterisk (*) is displayed in front of a parameter name, data for this controller exists. The number to the right of a parameter determines the MIDI controller mapped to the parameter for recording.



1. In the CC column, the controller assignment is shown, if any.
2. VST 3 controllers
3. MIDI controllers
4. Settings for the selected controller
5. Global settings

In the middle of the section, you can make settings for the parameter that is selected in the list. The following options are available:

Parameter name and color selector

By clicking on the colored square to the right of the parameter name, you can specify which color is used for the parameter in the Inspector and in the note display. You can also define a Note Expression color set.

MIDI assignment field and pop-up menu

Here, you can specify the MIDI controller assignment for recording for the selected parameter by either selecting it from the pop-up menu or using the MIDI Learn button.

MIDI Learn button

You can assign any control of your external MIDI controller to the selected parameter. Click the MIDI Learn button and move the fader or knob on the external device.

Parameter range controls (Min/Max)

If you want to use only a certain value range of the parameter, you can specify it here. Set the range by changing the minimum and maximum values or use the slider below the fields.

Using a parameter range allows you to make finer settings for certain parameters. This is especially useful for the VST 3 parameter "Tuning". Specify the range you want to use and enter or record the corresponding data.

In the lower part of the Note Expression section, the following global settings and parameters are available:

MIDI as Note Expression

If this button is activated, incoming MIDI controllers will be recorded as Note Expression data.

Channel Rotation

If this option is activated, individual MIDI channels are assigned to incoming MIDI notes and their controllers.

IMPORTANT

In order to use the **Channel Rotation** mode, the input controller must support channel rotation.

Overdub

If this option is activated, you can overdub existing Note Expression data.

Latch Buffer

With this button, you can activate/deactivate the latch buffer used for overdub recording.

RELATED LINKS

[Mapping controllers](#) on page 776

[Selecting the Event Type](#) on page 698

[Project Colors Dialog](#) on page 984

[Recording MIDI controllers as Note Expression data](#) on page 786

[Channel Rotation](#) on page 778

[Overdubbing](#) on page 778

[Latch mode](#) on page 778

Showing/hiding controllers

You can specify which parameters are displayed in the Note Expression event editor and in the event display by activating/deactivating them in the leftmost column in the list. When you want to edit a single parameter, it might be best to hide the data for the other parameters.

Activating several parameters allows you to view them in context, giving you a better overview. In the Inspector, visible controllers are shown with a filled rectangle in front of their name. Hidden controllers are shown with an empty rectangle. To show or hide a parameter, click on its rectangle.

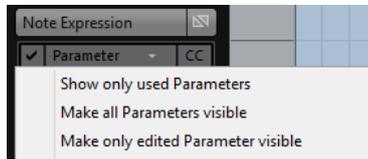


This controller is visible.



This controller is hidden.

Filtering the list



If you click on the Parameter column header, a pop-up menu opens, containing the following filter commands:

Show only used Parameters

Select this command to only display the parameters in the list for which data exists.

Make all Parameters visible

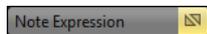
Select this command to display all available parameters in the event display.

Make only edited Parameter visible

Select this command to display only the edited parameter in the event display.

Bypassing Note Expression

Like for most other Inspector sections, you can bypass the Note Expression settings by clicking on the button at the top right of the Inspector section, so that it lights up yellow. If Bypass is activated, all Note Expression data will be bypassed for the track.



Bypass is active for the Note Expression Inspector section.

Mapping controllers

External keyboards have no controls or faders for VST 3 parameters, which can therefore not be recorded directly. To remedy this, you have the possibility to assign a certain MIDI controller (or Pitchbend and Aftertouch) to any of the Note Expression parameters in the list. The MIDI assignment is shown in the CC column in the Inspector.

The same MIDI controller can be used for several parameters, but only one of these controllers can be active at a time. If the mapping is active, the number for the assigned MIDI controller is displayed (or PB and AT for Pitchbend and Aftertouch, respectively). If a MIDI controller is assigned but inactive, e. g., because the selected parameter uses the same assignment as another parameter, a dot is shown in the CC column.

The VST 3 parameter Tuning is automatically assigned to the pitchbend wheel of your MIDI controller. All other parameters are assigned by default to the first MIDI controller (CC1: Modulation).

To manually specify the record mapping for the parameters, use the MIDI Learn function, or load a mapping preset, see below.

Manual mapping

To manually map a MIDI controller to the selected Note Expression parameter, you can select the MIDI controller from the MIDI assignment pop-up menu. If the MIDI controller you are looking for is not on the list, select “MIDI Controller Setup...” and activate it in the dialog. This is the same as selecting which controllers are available for the controller lanes in the Key Editor.

RELATED LINKS

[Selecting the Event Type](#) on page 698

MIDI Learn

Another way to assign the knobs and faders of your MIDI instrument to Note Expression parameters is using the MIDI Learn function.

PROCEDURE

1. Select the parameter to which you want to assign a MIDI controller.
2. Below the list, click the MIDI Learn button to the right of the MIDI assignment pop-up menu.
3. Use the knob or fader on your MIDI device that you want to assign to the selected Note Expression parameter.
This control is now automatically assigned.
4. Repeat this step for all the parameters you want to control with your MIDI device.

RESULT

Now, you can record Note Expression data using the controls on your MIDI device.

Using mapping presets

When you have set up the mapping for a connected MIDI device, you can save these settings as mapping presets for future use, e. g. when working again with this device.

PROCEDURE

1. Open the Parameter pop-up menu and select “Save MIDI Input Assignment”.
2. In the file dialog that appears, specify a name and a location for the file.
A file with the extension “*.neinput” is created.

RESULT

You can recall the mapping presets you created by using the “Load MIDI Input Assignment” command on the Parameter pop-up menu.

Recording

Recording notes and Note Expression data

To record MIDI notes together with Note Expression data using an external MIDI device, proceed as follows:

PROCEDURE

1. Create an instrument track, e. g. using HALion Sonic SE as VST instrument.

The Note Expression Inspector section shows which parameters are available for recording.

- You can also load one of the available presets. Some presets were created especially for the use with Note Expression. These have the suffix “.NoteExp”.
2. Select a parameter from the list.
 3. Set up the record mapping for the parameters.
You can use the data range controls to use only a subrange of the full parameter range. This allows for finer recording and editing.
 4. Record some MIDI notes and use the mapped controls on your MIDI device to record the corresponding Note Expression data.
 5. Open the Key Editor and activate the “Show Note Expression Data” button on the toolbar. The Note Expression data is shown on the notes for which it was recorded.

RELATED LINKS

[Mapping controllers](#) on page 776

Channel Rotation

Some input controllers can assign individual MIDI channels to incoming MIDI notes and their controllers. Each new MIDI note event gets its own internal MIDI channel and all controller that belong to this note event are created with the same MIDI channel. This allows a 16 voice polyphony, which is sufficient for most performances.

The **Channel Rotation** mode allows a correct mapping of these data as Note Expression data per note event. This reduces the amount of data in comparison to the MIDI to Note Expression conversion method.

IMPORTANT

In order to use the **Channel Rotation** mode, the input controller must support channel rotation.

RELATED LINKS

[Setting up the Note Expression Inspector Section](#) on page 774

Overdubbing

You can also record or replace Note Expression data for existing notes. This is achieved by overdubbing. To activate this mode, click the Overdub button in the Note Expression Inspector section. When this button is activated, no notes are recorded when you click the Record button. Instead, you can use the controls on your MIDI device to record Note Expression data for the note that is playing.

IMPORTANT

- To be able to record MIDI notes again, you have to deactivate the Overdub button when you have finished recording the Note Expression data.
 - If notes are selected when you start overdubbing, controllers will be recorded for these notes only. To record controllers for all notes touched by the position cursor, make sure to deselect all notes in the event display before you start overdubbing.
-

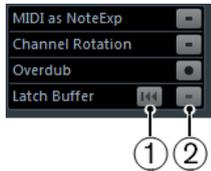
Latch mode

When Cubase receives controller data from an external MIDI device, this information, i. e. the setting of the faders and knobs on the device, is automatically written to the Latch buffer. By activating Latch mode when overdubbing Note Expression data, you can add the data in the

Latch buffer to the notes while these are played back. This can be useful when you want to overdub Note Expression data starting at specific controller values (i. e. at predefined initial knob or fader settings), for example.

To use Latch mode, start by mapping each control to one of the available VST 3 parameters. Then activate the Latch buffer button and set the knobs and faders on the MIDI controller to the desired values.

When you now start overdubbing, the values for all these controls are attached to the notes that are passed during overdub recording, replacing any existing controller data of the same type.



1. Reset Latch Buffer
2. Click here to activate Latch mode.

RELATED LINKS

[Mapping controllers](#) on page 776

Resetting the Latch buffer

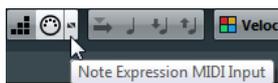
Whenever data is present in the Latch buffer, the “Reset Latch buffer” button becomes available. If you click this button, all the memorized values are removed from the Latch buffer.

NOTE

When you are using Latch mode in combination with cycle recording, the Latch Buffer is automatically reset at the end of the cycle.

Recording Note Expression data via MIDI input

An alternative way to enter Note Expression data for existing notes is using Note Expression MIDI input. When you activate the “MIDI Input” and “Note Expression MIDI Input” buttons on the Key Editor toolbar, you can replace the controllers for the selected note.



- To record Note Expression data via MIDI input, select a note and move the active control on your MIDI device.
The note is played in real time and any manipulation of the controls, i. e. all incoming controller data, is recorded for this note. Recording stops when the end of the note or the end of the release phase is reached, or when you deselect the note.

RELATED LINKS

[Editing the release phase of a note](#) on page 784

Recording the sustain pedal

When the sustain pedal (MIDI CC 64) of the connected MIDI device is held during recording, the following applies for VST 3 parameters (not for continuous MIDI controllers):

- When a note-off event is received (when the key on the connected keyboard is released), this message is not sent to the VST 3 instrument but is instead created by the program when the sustain pedal is released.

This makes it possible for the VST 3 instrument to play back controllers that are sent after a key was released.

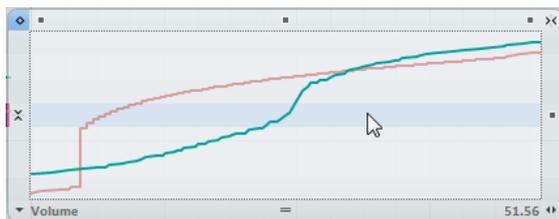
- The release phase of the recorded notes ends when the sustain pedal is released.

Editing Note Expression data

In the Key Editor, you can view and edit the Note Expression data for notes in the Note Expression event editor. This is opened by double-clicking a note in the event display. In the editor, you can add Note Expression data from scratch. All parameters that are marked as visible in the Inspector are displayed as curves in the editor.

NOTE

When several notes are selected in the Key Editor and you double-click any of them, the Note Expression event editor opens for all these notes. This is useful if you want to edit all notes in a chord in the same way, for example.



- To adjust the editor size, click and drag the Resize handle (in the center of the lower border of the editor). This allows you to switch between 3 different window sizes.
- To navigate from note to note while the editor is open, use the **Left Arrow/Right Arrow** keys.

You can also use the key commands **Tab** and **Shift-Tab** to step through the notes.

To make settings in the editor, first select the parameter that you want to make settings for. How to do this depends on whether you want to modify existing data or enter new data from scratch:

- If you want to enter new data from scratch, i. e. create events for a parameter that has not been used yet, you have to select this parameter in the Inspector to make it available in the editor.
- If you want to edit existing data, you specify which parameter to edit in one of the following ways: by clicking on the curve, by selecting the corresponding controller on the Parameter pop-up menu, or by selecting the parameter in the Note Expression Inspector section.

The parameter pop-up menu in the lower left corner of the editor lists all parameters that are used for the edited note. If the editor size is big enough, the name of the edited parameter is displayed to the right of the pop-up menu.

- You can close the editor by clicking outside of it in the event display.

You can also specify a key command for opening and closing the Note Expression event editor.

The value display

The value display in the lower right corner of the editor shows the current value at the (vertical) mouse pointer position. The value range differs depending on the parameter type, e. g. 0 to 127 for MIDI controllers or semitones and cents for Tuning.

Selection ranges

You can select a range of controller values by clicking and dragging in the editor with the Object Selection tool.

- If you hold down **Shift** and drag, any previous selection will be kept.
- You can move selections by dragging them in the editor.
- To copy a selection in the editor, click on it, keep the mouse button pressed, then press **Alt** and drag.

Editing functions

Drawing in data

You can enter or modify curves using the Draw tool or the line tool. The editing is the same as in the controller lanes. If the Object Selection tool is selected and the editor is open, you can press **Alt** to get the Draw tool.

RELATED LINKS

[Adding Events in the Controller Display](#) on page 700

[Editing Events in the Controller Display](#) on page 700

Using Cut, Copy, and Paste

- To cut, copy, and paste Note Expression data for a single parameter in the editor, use the corresponding commands on the Edit menu.

It is also possible to copy and paste data between different parameters.

NOTE

Pasting Note Expression data in the editor is restricted to the note (or notes if they are located at the same time position) for which the editor is open. However, you can copy all Note Expression data from one note to another using a key command.

- To paste all the Note Expression data from one note to other notes, set up the key command "Paste Note Expression" in the Key commands dialog (Note Expression category).

This pastes all the Note Expression information of one or several notes for which you have used the Copy command into the selected notes.

Using the "Paste Note Expression" command, you can copy the settings you made for one note into several other notes, or copy the settings for several selected notes into a number of other notes (which makes it easy to recreate specific drum patterns, for example).

If Note Expression data is copied from several source notes to a number of destination notes, the following applies:

- If the number of the source and destination notes matches, the data of the first "source" note is pasted into the first "destination" note, the data of the second source note into the second destination note, etc.

- If the number of source notes is smaller than the number of destination notes, the source note data will be pasted repeatedly into the destination notes in the order in which they appear.
When you copy the data from 2 source notes into 4 destination notes, for example, the first destination note gets the Note Expression data from the first source note, the second destination note the data of the second source note, the third destination note the data of the first source note and the 4th destination note the data of the second source note.

Deleting Note Expression data

To delete all or the selected Note Expression data, use the Delete command on the Edit menu or press **Backspace**.

Moving Note Expression data

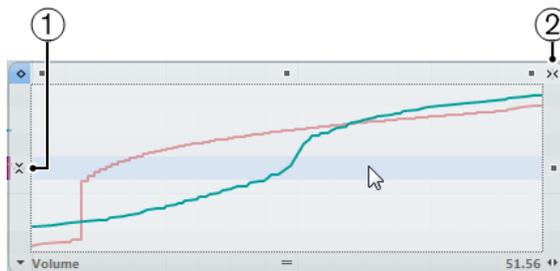
- To move all or the selected data of the active parameter, click with the Object Selection tool in the editor (not in the stretch area at the bottom of the window) and drag.
You can restrict the direction to vertical or horizontal by pressing **Ctrl/Cmd** while dragging. When you hold down **Alt** while dragging, the data is copied instead.

Fixed values

- To enter or edit a fixed value (i. e. a straight line), activate “One-Shot Mode” mode by clicking the button in the upper left corner of the window and click with the Draw tool anywhere in the editor to set the value.
Note that some VST 3 parameters are one-shot only. For these, this mode is automatically activated.

The snap controls

The horizontal snap button in the upper right corner of the editor corresponds to the Snap button in the Project window.



1. Vertical snap (best suited for the Tuning parameter)
2. Horizontal Snap

The Vertical Snap button in the middle of the left border of the editor is especially useful for the Tuning parameter. It allows you to enter the pitch in semitone steps instead of as a continuous curve. This way, it is much easier to create fast pitch modulations.

- To temporarily switch to vertical snapping while editing, hold down **Shift**.

RELATED LINKS

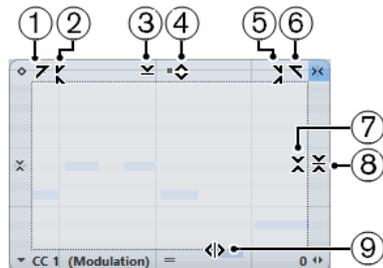
[Snap Function](#) on page 80

Note Expression Event Editor

The Note Expression event editor offers various modes for editing the Note Expression data. Most editing modes are activated by clicking the various smart controls, situated on the editor frame.

- To open the note expression event editor, double-click a note in the event display.

The note expression event editor features the following smart controls for specific editing modes:



1. Tilt Left

If you click in the upper left corner of the editor, you can tilt the left part of the curve. This allows you to tilt the event values at the start of the curve upwards or downwards.

2. Compress Left

If you **Alt**-click in the upper left corner of the editor, you can compress the left part of the curve. This allows you to compress or expand the event values at the start of the curve.

3. Scale Vertically

If you click in the middle of the upper border of the editor, you can scale the curve vertically. This allows you to raise or lower the event values of the curve in percent.

4. Move Vertically

If you click on the upper border of the editor, you can move the entire curve vertically. This allows you to raise or lower the values of the event values of the curve.

5. Compress Right

If you **Alt**-click in the upper right corner of the editor, you can compress or expand the right part of the curve. This allows you to compress or expand the event values at the end of the curve.

6. Tilt Right

If you click in the upper right corner of the editor, you can tilt the right part of the curve. This allows you to tilt the event values at the end of the curve upwards or downwards.

7. Scale Around Relative Center

If you **Alt**-click in the middle right corner of the editor, you can scale the curve relative to its center. This allows you to raise or lower the event values horizontally around the center of the editor.

8. Scale Around Absolute Center

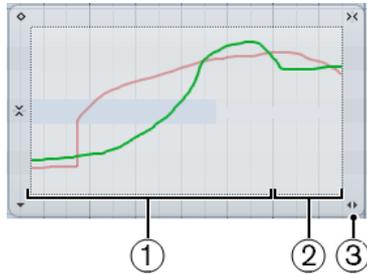
If you click in the middle right corner of the editor, you can scale the curve absolute to its center. This allows you to raise or lower the event values horizontally around the center of the editor.

9. Stretch

If you click on the lower border of the editor, you can stretch the curve horizontally. This allows you to move the event values of the curve to the left or to the right.

Editing the release phase of a note

Sometimes it can be necessary to edit the release phase of a note, e. g. to work on the tail of a note which is still sounding after the note-off message was sent. These settings are made in the release section of the editor. To add a release phase, click and drag the release length handle in the lower right corner of the editor.



1. Note
2. Release phase
3. Release length handle

When Note Expression data are displayed in the Key Editor, the release phase of a note is also shown.



Setting the length of the release phase

To determine the length of the release phase, drag the release length handle or enter the value manually on the info line. You can also modify the release length after having edited or recorded controller data. Only the controllers within the specified length will be heard during playback.

NOTE

When you have opened the editor for several notes and hold down **Alt** while setting the release length for one note, the release phase of all the notes will be changed accordingly, i. e. they will all end at the same time position.

Adding controllers in the release phase

You can add controllers in the release phase by overdubbing or by manually entering Note Expression data in the editor. When you are overdubbing Note Expression data, the length of the existing release phase will be used to associate newly recorded data to the notes. When the sustain pedal of your external device is held during recording, the notes automatically get a corresponding release phase.

Editing multiple notes simultaneously

When you have opened the editor for several notes, any editing (e. g. entering Note Expression data, applying time stretch or modifying the length of the release phase) affects all the notes that are present at the time position where you perform the editing.

Note Expression and MIDI

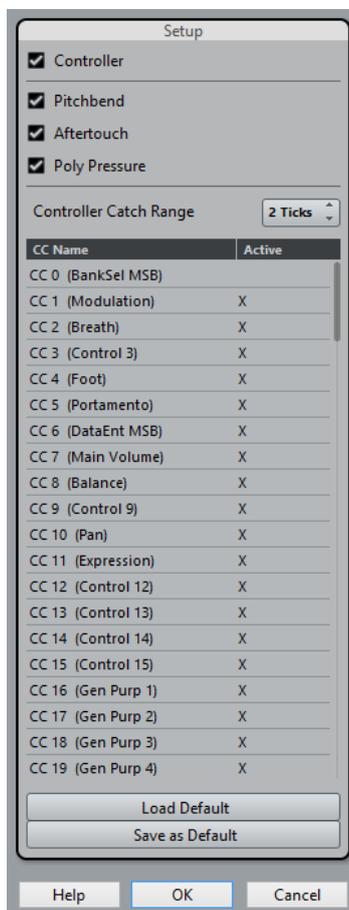
Making global settings

In the Note Expression MIDI Setup dialog, you can make some global settings for the use of the Note Expression functionality with MIDI. In this dialog, you can specify exactly which MIDI controllers will be used when recording Note Expression data, for example.

PROCEDURE

1. On the MIDI menu, open the Note Expression submenu and select “Note Expression MIDI Setup...”.
The Note Expression MIDI Setup dialog opens.
 2. When you have made the desired settings, click OK to close the dialog.
The settings you made in the Note Expression MIDI Setup dialog will be used every time that you use the “Convert to Note Expression” function or record MIDI controllers as Note Expression data.
-

Note Expression MIDI Setup Dialog



The dialog contains the following options:

Controller

Activate this option if you want to use MIDI controllers when working with Note Expression. In the table below, activate the MIDI controllers you want to use and deactivate the MIDI controllers that should be disregarded in the Note Expression context.

If MIDI controller data for a deactivated controller is received in Cubase, it will end up on the controller lane.

Pitchbend

Activate this option if you want incoming Pitchbend data to be used when working with Note Expression.

Aftertouch

Activate this option if you want incoming Aftertouch data to be used when working with Note Expression.

Poly Pressure

Activate this option if you want Poly Pressure data to be used when working with Note Expression.

Controller Catch Range

This allows you to associate controllers with a note, although they were sent slightly before the note-on message. Specify the number of ticks in the value field. For example, this might be necessary when working with some electronic drums for which the drum head position message is sent before the note.

Recording MIDI controllers as Note Expression data

To record Note Expression data using standard MIDI controller messages, activate the “MIDI as Note Expression” button in the Note Expression Inspector section and enter the notes and controllers using your MIDI device. Afterwards, you can copy, paste and move the notes and the associated controller data will follow.

However, you should not shift individual notes from a chord, because this leads to conflicting controller messages. One way to avoid such conflicts is to record MIDI controllers as Note Expression data for monophonic performances only. Another option is to use a MIDI track set to “Any” channel and to split polyphony to separate channels. This is useful when working with guitar-to-MIDI controllers, where each string sends on a separate MIDI channel.

NOTE

When recording MIDI controllers as Note Expression data, keep in mind that this only works within the limits of standard MIDI controllers. With the exception of Poly Pressure, all MIDI controllers are channel-specific messages and therefore not available for notes.

IMPORTANT

When you are editing the MIDI notes after recording them, it might be necessary to consolidate the controller data.

Converting MIDI Controllers into Note Expression data

You can also convert the MIDI controller data on the controller lanes into Note Expression data.

PROCEDURE

1. Open the MIDI part in the Key Editor.
2. Make sure that the MIDI controllers to be recorded are activated in the “Note Expression MIDI Setup” dialog.
3. On the MIDI menu, open the Note Expression submenu and select “Convert to Note Expression”.

The MIDI data of the types you specified in the Note Expression MIDI Setup dialog is converted from controller lane data into Note Expression data, leaving the corresponding controller lanes empty.

RESULT

During this process, the program searches for notes that are sounding at the same time as the controllers and if several notes are playing at the same time, the same Note Expression parameters will be attributed to them, with the same values.

NOTE

When converting MIDI controllers into Note Expression data, release phases are automatically created where necessary, so that no controller data is lost during this process.

IMPORTANT

When you are editing the MIDI notes after the conversion, it might be necessary to consolidate the controller data.

RELATED LINKS

[Editing the release phase of a note](#) on page 784

Consolidating MIDI overlaps

It can be problematic to convert regular MIDI controllers into Note Expression data or to edit MIDI controllers which have been recorded as Note Expression data. For example, when you move notes so that they overlap other notes containing the same controllers (e. g. by moving or quantizing), these controllers are conflicting. This might cause trouble, especially for connected MIDI devices.

You can eliminate such controller conflicts using the “Consolidate Note Expression Overlaps” command on the Note Expression submenu of the MIDI menu. When you select this command, the following happens:

- If notes overlap that contain data for the same controller, the controller values of the second note are used from the beginning of the overlap.
- If a note is moved so that it is positioned entirely within a longer note and if these notes contain controller data for the same controller, the controller values of the longer note are used until the encompassed note starts. The controllers for the “embedded” shorter note are used for the entire length of that note. At the end of the shorter note, the controllers of the longer note are used again.

Distributing notes to different channels

If you do not have a VST 3 instrument, but still want to use the Note Expression functions, proceed as follows:

PROCEDURE

1. Add a multi-timbral instrument, open its control panel, and assign the same sound to different channels.
 2. In the Inspector for the corresponding MIDI track, make sure the MIDI output pop-up menu is set to "Any".
 3. Enable the "MIDI as Note Expression" button and record or enter MIDI notes with expression as needed.
 4. On the MIDI menu, open the Note Expression submenu and select "Distribute Notes to MIDI Channels".
This will distribute the MIDI notes to different channels (starting at channel 1).
 5. Edit Note Expression for each note independently without controller conflicts.
-

Dissolving Note Expression data

- To convert Note Expression data into MIDI controller data on controller lanes, select the "Dissolve Note Expression" option from the Note Expression submenu on the MIDI menu. Note that this applies only to Note Expression data that consists only of MIDI controllers (i. e. not the VST 3 controller data).

Removing all Note Expression data

- To delete all the Note Expression data for the current selection, open the MIDI menu and, on the Note Expression submenu, select "Remove Note Expression".

Trimming Note Expression data

When you reduce the release length of a note after entering Note Expression data for the release phase, some of the data ends up behind the release phase, thereby becoming unused.

- To keep only those Note Expression events that are actually used, select the notes and select "Trim Note Expression to Note Length" from the Note Expression submenu on the MIDI menu.
This will delete any Note Expression data present after the end of the release phase for the notes.

HALion Sonic SE

HALion Sonic SE is a VST 3-compatible VST instrument. For use with Note Expression, it offers the VST 3 parameters "Tuning" (Pitch), "Volume", and "Pan". HALion Sonic SE comes with several presets (with the file name extension "*.NoteExp") that can be used with Note Expression. Use them to get a quick overview of the possibilities HALion Sonic SE offers when working with Note Expression.

For detailed information about HALion Sonic SE and its parameters, see the separate PDF document **HALion Sonic SE**.

NOTE

You can also open the Project Browser to have all the Note Expression data shown in a list.

RELATED LINKS

[Project Browser \(Cubase Pro only\)](#) on page 880

Chord Functions

The chord functions provide you with many possibilities for working with chords.

The chord functions allow you to:

- Build chord progressions by adding chord events to the chord track.
- Convert chord events to MIDI.
- Use the chord track to control audio playback (Cubase Pro only) or MIDI playback.
- Use the chord track voicing to change the pitches of your MIDI.
- Extract chord events from MIDI data to get an overview of the harmonic structure of a MIDI file.
- Record chord events with a MIDI keyboard.

RELATED LINKS

[Chord Editing Section](#) on page 694

Chord Track

The chord track allows you to add chord events and scale events.

RELATED LINKS

[Scale Events](#) on page 797

[Chord Events](#) on page 790

Adding the Chord Track

PROCEDURE

- Select **Project > Add Track > Chord**.

RESULT

The chord track is added to your project.

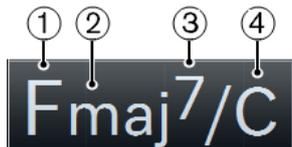


Chord Events

Chord events are representations of chords that control or transpose playback on MIDI, instrument, and audio tracks (Cubase Pro only).

Chord events alter the pitches of MIDI notes and VariAudio segments (Cubase Pro only) if their tracks are set up to follow the chord track.

Chord events have a specific start position. Their end, however, is determined by the start of the next chord event. They can have a root note, a type, a tension, and a bass note:



1. Root note
2. Type
3. Tension
4. Bass note

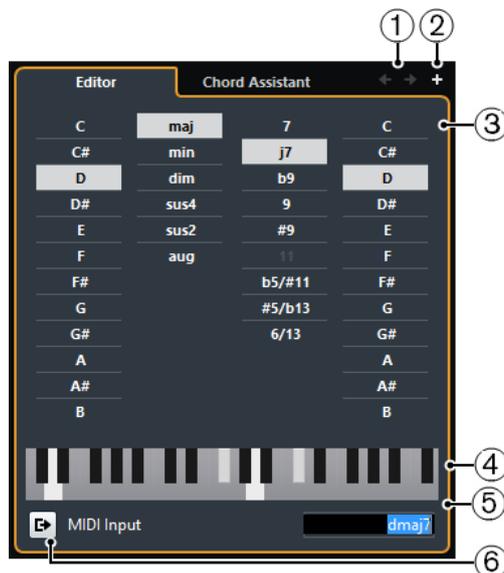
RELATED LINKS

[Controlling MIDI or Audio Playback using the Chord Track](#) on page 801

Chord Editor

The **Chord Editor** allows you to define or change chord events, and to add new chord events.

- To open the **Chord Editor**, double-click a chord event.



1. **Go to Previous/Go to Next Chord**
Allow you to select the previous/next chord on the chord track for editing.
2. **Add Chord**
Adds a new undefined chord event on the chord track.

NOTE

This works only if the last chord event on the chord track is selected.

3. Chord definition buttons

Activate these buttons to define a root note, a chord type, a tension, and a bass note for your chord event.

NOTE

If you do not select a separate bass note, the setting is linked to the root note, so that no extra bass note is heard.

4. Keyboard display

Shows the notes of the chord event, considering the current voicing settings.

5. Define Chord by Text Input

Allows you to define a chord using the computer keyboard.

6. Activate MIDI Input

Allows you to define a chord by playing a chord on your MIDI keyboard. If the chord is recognized, it is reflected by the chord buttons and the keyboard display.

Adding Chord Events

PREREQUISITE

Add the chord track.

PROCEDURE

1. Select the **Draw** tool and click in the chord track.
An undefined chord event named X is added.
 2. Select the **Object Selection** tool and double-click the chord event.
 3. In the **Editor**, select a root note.
 4. Optional: Select a chord type, tension, and bass note.
 5. Do one of the following:
 - To close the **Editor**, click anywhere outside the **Editor**.
 - To add a new undefined chord event, click **Add Chord**.
-

RELATED LINKS

[Adding the Chord Track](#) on page 789

Defining Chords By Text Input

In the chord **Editor**, you can use the text input field to define a chord with the computer keyboard.

PROCEDURE

1. Double-click a chord event to open the chord **Editor**.
2. Click in the text input field at the bottom of the **Editor**.
3. Enter a chord by performing the following actions:
 - Define a root note, for example, C, D, E.
 - Define accidentals, for example, # or b.
 - Define the chord type, for example maj, min, dim, sus, or aug.
 - Define a chord extension, for example 7, 9, or 13.

NOTE

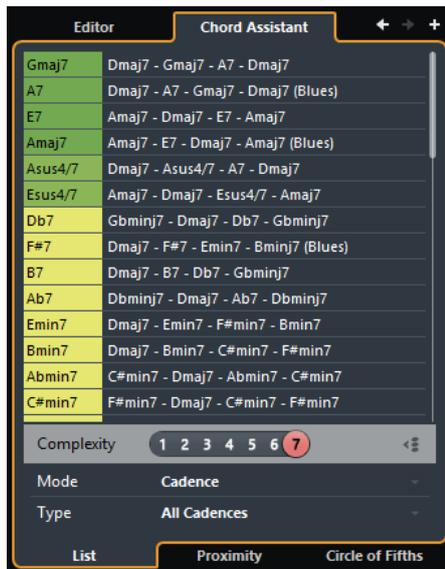
If you have activated **Solfège** in the **Note Name** pop-up menu (**File > Preferences > Event Display > Chords**), you can also enter chords in this format. You must capitalize the first letter and write “Re” instead of “re”, for example. Otherwise, the chord is not recognized.

4. Press **Tab** to add a new chord and define it.

Chord Assistant

The **Chord Assistant** allows you to use a chord as a starting point to get suggestions for the next chord.

- To open the **Chord Assistant**, in the **Chord Editor**, click **Chord Assistant**.

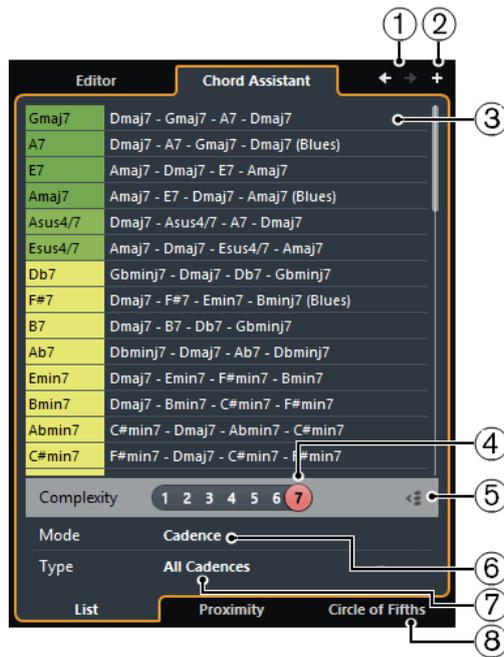


The **Chord Assistant** has the following modes:

- List
- Proximity
- Circle of Fifths

Chord Assistant – List (Cubase Pro only)

The **List** mode of the **Chord Assistant** allows you to create harmonic chord progressions based on harmonic rules that can be more or less complex.



1. Go to Previous/Go to Next Chord

Allow you to select the previous/next chord on the chord track for editing.

2. Add Chord

Adds a new undefined chord event on the chord track.

NOTE

This works only if the last chord event on the chord track is selected.

3. Suggestions

Shows suggestions for the next chord. Click a chord suggestion to select it.

4. Complexity Filter

Allows you to increase the complexity and thus the number of suggestions. The higher the complexity, the more suggestions you get.

5. Gap Mode

Activate this button to get suggestions for the chords in between 2 defined chords based on the previous and the next chord.

Deactivate this button to get suggestions for the next chord based on the previous chord.

NOTE

For this to work you must select all undefined chords in between 2 defined chords.

6. Algorithm Mode

Select **Cadence** to build up a chord progression based on cadences. Select **Common Notes** to build up a progression by specifying how many common notes the chords should share.

7. Cadence Type

NOTE

This option is only available if you selected **Cadence** as **Algorithm Mode**.

Allows you to select a cadence type for the suggestions. This way, only the chords with specific harmonic functions are suggested.

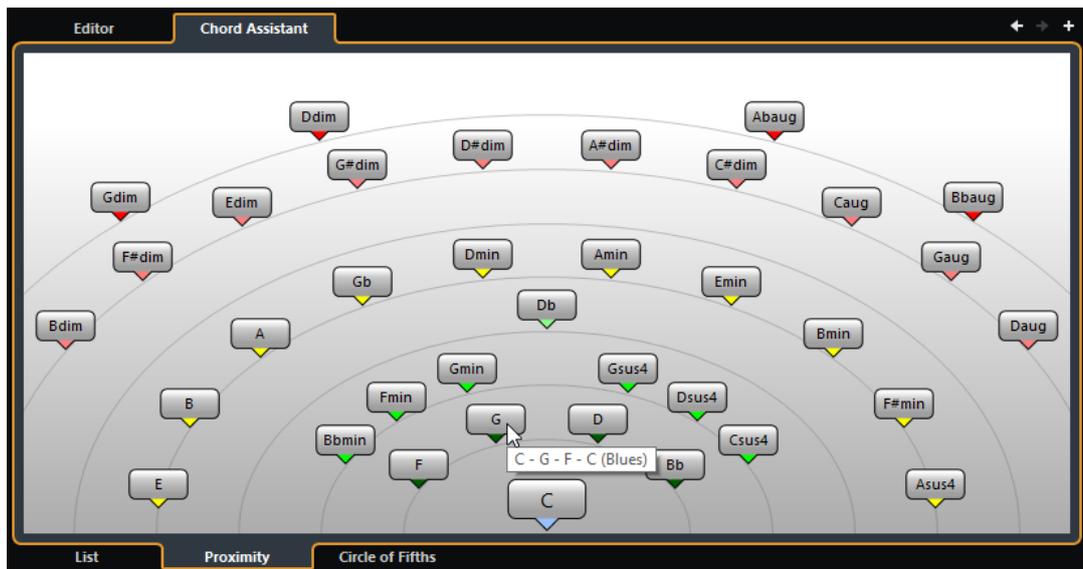
8. Chord Assistant tabs

Click the tabs to open one of the chord assistant modes.

Chord Assistant – Proximity (Cubase Pro only)

The **Proximity** mode of the **Chord Assistant** takes a set of harmonic rules into account to offer suggestions that match the origin chord.

If you open the **Chord Assistant** for a chord event, the previous event is set as origin chord. This is shown in the bottom center of the **Chord Assistant**. The farther away a suggestion is situated from the origin chord in the graphic, the more complex the suggestion. The suggested chords are triads or 4-note chords.



- To assign a chord to the selected chord event and play it, click it. The last 3 suggested chords that you clicked are shown with a highlighted border.

NOTE

- If you move the mouse pointer over one of the suggestions in the **Chord Assistant**, a tooltip with suggestions for progressions is shown.
- The **Proximity** mode underlies the same rules as the **List** mode.

Adding Chord Events Based on Suggestions (Cubase Pro only)

If you do not know what your chord progression should look like, you can use the **Chord Assistant** to get suggestions for the following chords.

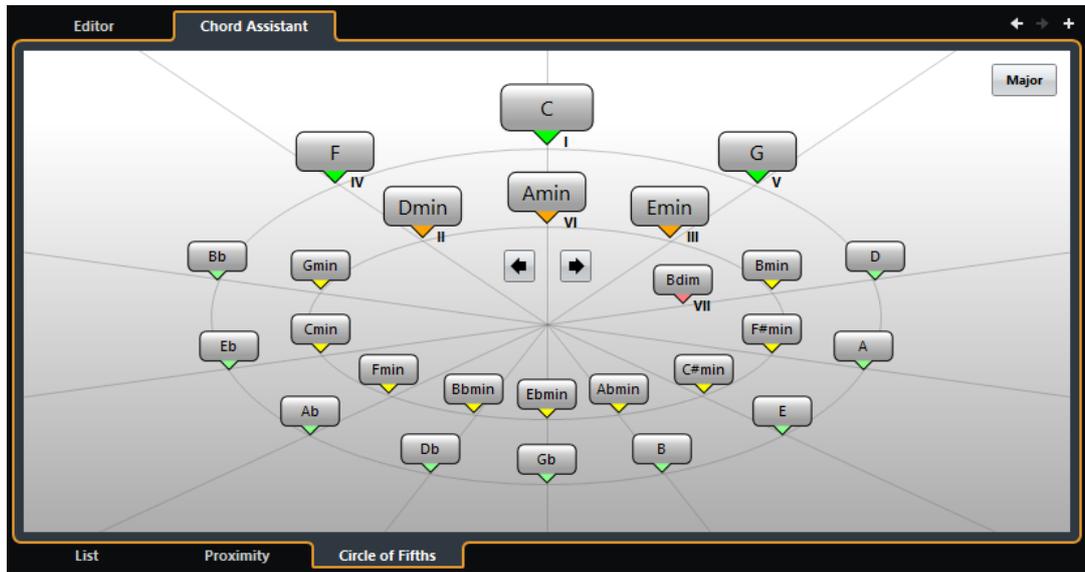
PREREQUISITE

Add a chord event on the chord track.

PROCEDURE

1. Double-click the chord event.
2. Click **Chord Assistant**.
3. Click **Add Chord**.
4. Do one of the following:
 - To display the suggestions in a list, click the **List** tab.

The roman numerals mark the chords of the current key with their scale degree. You can use these chords to create typical chord progressions or you can use the other chords for more creative results.



- To play a chord and assign it to the selected chord event, click it. The last 3 chords that you clicked are shown with a highlighted border.
- To define a new key, right-click the chord in the **Chord Assistant** and select **Use as Origin**, or use the **Rotate Left/Rotate Right** controls.
- To select the parallel minor chord and define it as key, click **Major/Minor**.

Auditioning Chord Events

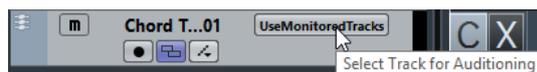
To hear the chord events on the chord track, you must connect the chord track to the output of an instrument or a MIDI track.

PREREQUISITE

Add the chord track and some chord events.

PROCEDURE

1. Do one of the following:
 - To add an instrument track, select **Project > Add Track > Instrument**.
 - To add a MIDI track, select **Project > Add Track > MIDI**.
2. Assign a VST instrument to your instrument or MIDI track and select a sound.
3. In the chord track **Inspector**, activate **Acoustic Feedback**.
4. From the **Select Track for Auditioning** pop-up menu, select the track that you want to use for auditioning.



RESULT

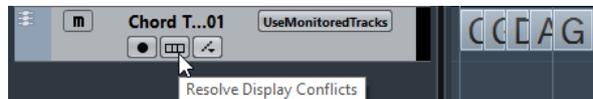
The chord events on the chord track now trigger the sound of the assigned instrument on the MIDI or instrument track.

Changing How Chord Events Are Displayed

You can change how chord events are displayed. This is useful if chord events overlap each other at low zoom levels, or if you do not like the font type.

PROCEDURE

1. On the chord track, activate **Resolve Display Conflicts**.



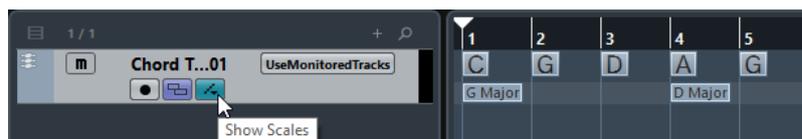
2. Select **File > Preferences > Event Display > Chords** and set up the chord font. Here you can also determine the note name and naming format.

Scale Events

Scale events inform you which chord events fit in a specific sequence of notes that belong to a specific root note.

Cubase automatically creates scale events for your chord events.

- To show the scale events, activate **Show Scales** on the chord track.



- To audition the notes that belong to a scale event, click it.

However, you can also add and edit scale events manually.

Scale events have a specific start position. Their end is determined by the start of the next scale event.

Editing Scale Events

PREREQUISITE

Add the chord track and chord events. Deactivate **Automatic Scales** in the chord track **Inspector**.

PROCEDURE

1. On the chord track, activate **Show Scales**.
The scale lane is displayed.
2. Select the chord event.
A scale event is shown on the scale lane.
3. Do one of the following:
 - Click the first scale event on the chord track, and on the info line, select a **Root Key** and **Type**.

Start	Root Key	Type
1. 1. 1. 0	G	maj

- Double-click the scale event, and in the keyboard that appears, select a **Root Key** and **Type** of the scale.



The keys that correspond to the scale are highlighted.

Voicings

Voicings determine how chord events are set up. They define the vertical spacing and order of the pitches in a chord, but also the instrumentation and genre of a musical piece.

For example, a C chord can be spread over a wide range of pitches, and a pianist will choose different notes than a guitarist. The pianist may also play completely different pitches for different musical genres.

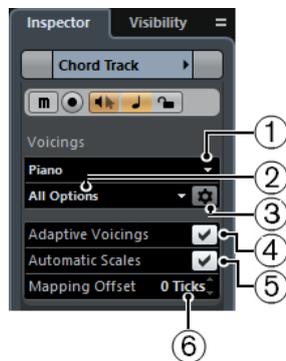
- You can set up voicing for the entire chord track in the chord track **Inspector**.
- You can set up voicings for individual chord events on the **Voicing** pop-up menu on the info line.

NOTE

If **Adaptive Voicings** is activated in the chord track **Inspector**, you can only change the voicings for the first chord event on the info line.

Setting up Voicings

To set up voicings for the entire chord track, you can use the chord track **Inspector**.



1. **Voicing library**
Allows you to select **Guitar**, **Piano**, or **Basic** as a voicing library.
2. **Voicing library subset**

NOTE

This is only available if **Guitar** or **Piano** is set as voicing library.

Allows you to select a preset voicing library subset.

3. **Configure voicing parameters**
Allows you to configure your own voicing parameters for a specific voicing scheme.
4. **Adaptive Voicings**
Activate this to let Cubase set the voicings automatically. This prevents the individual voices from jumping too much.
5. **Automatic Scales**

Activate this to let Cubase set the scales automatically.

6. Mapping Offset

If you enter a negative number of ticks, the chord events will affect the MIDI notes that have been triggered too early.

Configure Voicing Parameters

If you click **Configure Voicing Parameters** in the **Voicings** section of the **Inspector**, you can configure your own voicing parameters for a specific voicing scheme.

NOTE

The **Start Voicing** section for piano, guitar, and basic voicings lets you select a start voicing. This is only available for MIDI, instrument, and audio tracks, but not for the chord track, and only if you select **Voicings** in the **Follow Chord Track** pop-up menu.

In the **Style** section for **Piano** voicings, you can set up the following parameters:

Triads

Sets a triad. Chords with more than 3 notes are not changed.

Triads with maj9

Sets a triad with a major ninth, but without root note. Chords with more than 3 notes are not changed.

Triads with maj9 and min9

Sets a triad with a major and a minor ninth, but without root note. Chords with more than 3 notes are not changed.

4-note chords

Sets a 4-note chord without root note. Chords with less than 3 notes are not changed.

4-note chords (Open Jazz)

Sets a 4-note chord without root note and without fifth. Chords with less than 3 notes are not changed.

5-note chords

Sets a 5-note chord with a ninth. Chords with less than 4 notes are not changed.

In the **Options** section for **Piano** voicings, you can set up the following parameters:

Add Root Note

Adds a root note.

Duplicate Root

Duplicates the root note.

Fatten up

Duplicates the tenor.

In the **Voicing Range** section for **Piano** voicings, you can set up the following parameters:

Lowest Root Note

Sets the limit for the lowest root note.

Lowest Note

Sets the limit for the lowest note, except the root note.

Highest Note

Sets the limit for the highest note, except the root note.

In the **Style** section for **Guitar** voicings, you can set up the following parameters:

Triads

Sets a triad with 4, 5 or 6 voices.

4-Note Chords

Sets a 4-note chord with 4, 5 or 6 voices without tensions.

3-String Triads

Sets a 3 string triad.

Modern Jazz

Sets 4-note, 5-note, and 6-note chords, partly without root note, but with tensions.

For **Basic** voicings only **Octave Offset from C3** is available. This allows you to determine an offset value for the octave range.

Converting Chord Events to MIDI

You can convert chord events to MIDI for further editing or for printing a lead sheet in the **Score Editor**.

PROCEDURE

1. Add an instrument track or a MIDI track.
 - To add an instrument track, select **Project > Add Track > Instrument**.
 - To add a MIDI track, select **Project > Add Track > MIDI**.
2. Do one of the following:
 - To convert all chord events to MIDI, select **Project > Chord Track > Chords to MIDI**.
 - To convert only selected chords to MIDI, select the chord events and drag them to the MIDI or instrument track.

RESULT

A new MIDI part is created, containing the chords as MIDI events.

Assigning Chord Events to MIDI Effects or VST Instruments

PREREQUISITE

Create a chord progression on the chord track and add a MIDI or instrument track to your project.

PROCEDURE

1. In the **Inspector** for the MIDI or instrument track, open the **MIDI Inserts** section.
2. Click an insert slot and select **Chorder** from the **Effect Type** pop-up menu.
The **Chorder** effect is activated, and its control panel opens.
3. On the chord track, select the chord events and drag them to the **Chorder** control panel.

The drop position determines the velocity area and the position of the first chord event. All subsequent chord events are mapped chromatically. Chord events with more than one occurrence are only assigned once.

To remap the chords, hold down **Alt** and drag again.

4. On your MIDI keyboard, hit the corresponding keys to play back the chords.
-

Assigning Chord Events to HALion Sonic SE Pads

PREREQUISITE

Create a chord progression on the chord track and add an instrument track with HALion Sonic SE as VST instrument to your project.

PROCEDURE

1. On the chord track, select the chord events and drag them to the HALion Sonic SE pads. The first chord event is mapped to the pad where you dropped it, and all subsequent chord events are mapped to the following pads.
 2. Click the corresponding pads on the HALion Sonic SE keyboard to trigger the chords.
-

Controlling MIDI or Audio Playback using the Chord Track

You can use the chord track to control audio playback (Cubase Pro only) or MIDI playback.

Using Live Transform

Live Transform allows you to transpose the MIDI input live to a chord progression on the chord track. This way, you do not have to worry about what key you hit on your MIDI keyboard as the MIDI input is transposed to match chords or scales on your chord track in realtime.

PROCEDURE

1. Create a MIDI or an instrument track and activate **Record Enable**.
 2. In the **Inspector**, open the **Chords** section.
 3. Open the **Live Transform** pop-up menu and do one of the following:
 - To map the MIDI input to chord events, select **Chords**.
 - To map the MIDI input to scale events, select **Scales**.
 4. Hit some keys on your MIDI keyboard or on the **Virtual Keyboard**.
-

RESULT

Any key that you hit is mapped in realtime to the chord or scale events on the chord track.

Using Follow Chord Track

This allows you to match an existing recording to a chord progression on the chord track.

PROCEDURE

1. Select the track that you want to match to the chord track.
2. In the **Inspector**, click **Chords**.
3. Open the **Follow Chord Track** pop-up menu and select a mode.

NOTE

If this is the first time that you open this pop-up menu for the track, the **Follow Chord Track** dialog opens.

4. In the **Follow Chord Track** dialog, make your settings.
5. Click **OK**.

RESULT

The events on your track now match the chord progression on the chord track.

NOTE

If you matched your MIDI track to the chord track, some of the original MIDI notes may be muted. To hide these notes in the editors, select **File > Preferences > Editing > Chords** and activate **Hide muted Notes in Editors**.

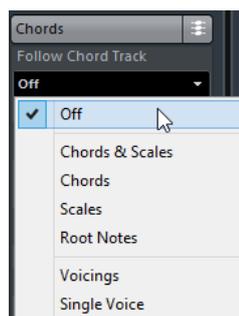
RELATED LINKS

[Follow Chord Track Dialog](#) on page 803

[Follow Chord Track Modes](#) on page 802

Follow Chord Track Modes

This section of the **Inspector** allows you to determine how your track follows the chord track.



The following options are available on the **Follow Chord Track** pop-up menu:

Off

Follow Chord Track is deactivated.

Chords & Scales

This maintains the intervals of the original chord or scale as far as possible.

Chords

This transposes MIDI notes to match the key note and maps them to the current chord.

Scales

This transposes MIDI notes to match the current scale. This allows a bigger variety of notes and a more natural performance.

Root Notes

This transposes MIDI notes to match the root note of the chord event. The effect corresponds to using the transpose track. This option is suitable for bass tracks.

Voicings

This transposes MIDI notes to match the voices of the selected voicing library.

Single Voice

Maps MIDI notes and VariAudio segments (Cubase Pro only) to the notes of a single voice (soprano, tenor, bass, etc.) of the voicing. Use the pop-up menu below to select the desired voice.

NOTE

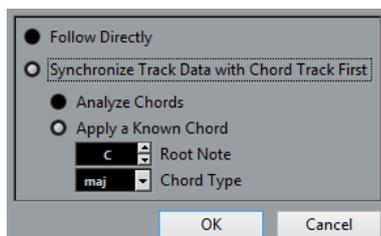
If you apply this mode to a selection of tracks that contain separate voices, you can set up one track as master and the others as voicing slaves. This way, you can change the voicing of the master, and the slaves will follow automatically.

RELATED LINKS

[Assigning Voices to Notes](#) on page 804

Follow Chord Track Dialog

This dialog opens the first time that you select an option from the **Follow Chord Track** pop-up menu on the **Chords** section of the **Inspector**.



Follow Directly

Activate this if your VariAudio segments (Cubase Pro only) or MIDI notes are already in accordance with the chord track. This is the case if you extracted your chords from the MIDI events on the track by selecting **Project > Chord Track > Create Chord Symbols**, for example.

Synchronize Track Data with Chord Track First

Activate **Analyze Chords** if the track data has nothing in common with the chord events. This analyzes the MIDI events and matches the found chords to the chord track. This is only available for MIDI.

Activate **Apply a Known Chord** if the track data has nothing in common with the chord events and if there are no chord changes. Specify **Root Note** and **Chord Type** of your events.

Using Map to Chord Track

This allows you to match individual parts or events to a chord progression on the chord track.

PROCEDURE

1. In the **Project** window, select the events or parts that you want to map to the chord track.
2. Select **Project > Chord Track > Map to Chord Track**.
3. From the **Mapping Mode** pop-up menu, select a mapping mode.

NOTE

If you select **Voicings** and no voices are found, **Auto** mode is used instead.

4. Click **OK**.

RESULT

The chords and scales of each event or part are analyzed and used for mapping. If no chords are found, Cubase assumes that the performance is in “C”. The available mapping modes and voicings correspond to the **Follow Chord Track** parameters in the **Chords** section of the **Inspector**.

RELATED LINKS

[Follow Chord Track Modes](#) on page 802

Assigning Voices to Notes

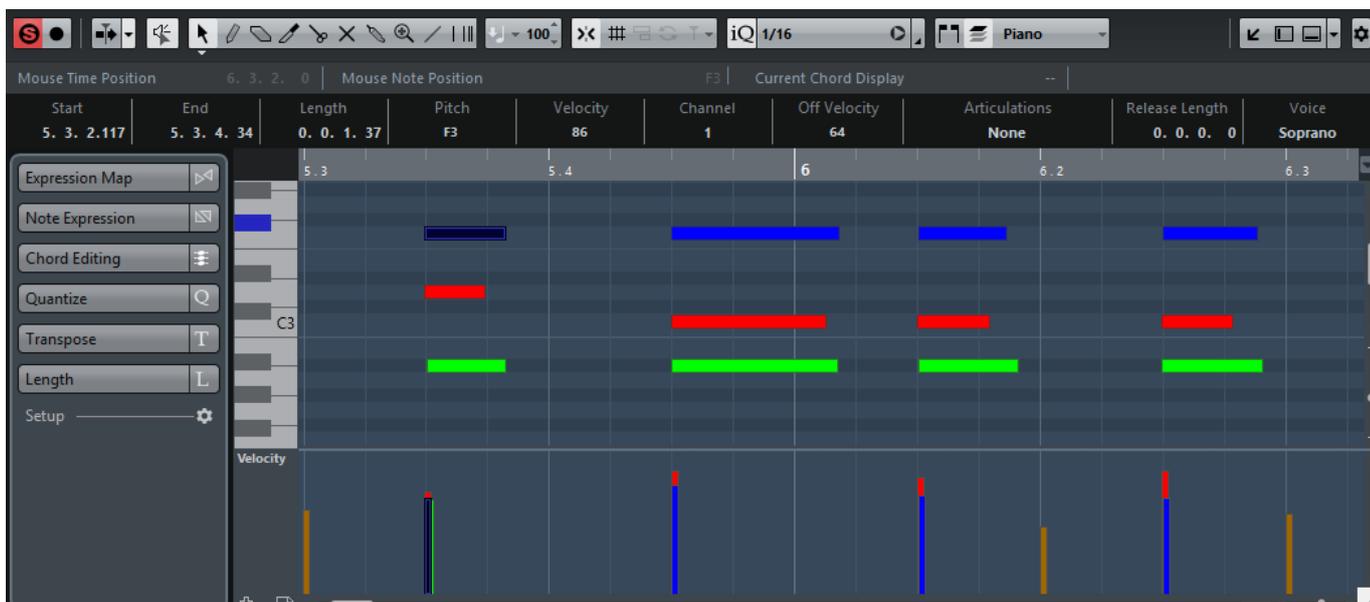
You can transpose MIDI notes to match the voices of a selected voicing library.

PROCEDURE

- Select **Project > Chord Track > Assign Voices to Notes**.

RESULT

The note pitches now match the voicing of the chord track and you can still edit the MIDI notes. If you now select a note in the **Key Editor**, you see that **Voice** on the info line is assigned.



Extracting Chord Events from MIDI

You can extract chords from MIDI notes, parts, or tracks. This is useful if you have a MIDI file and want to show its harmonic structure, and use this file as starting point for further experimenting.

PREREQUISITE

Add the chord track and create MIDI notes that can be interpreted as chords. Drums, monophonic bass, or lead tracks are not suitable.

PROCEDURE

1. In the **Project** window, select a part or one or several MIDI tracks.
You can also select the MIDI tracks, parts, or notes that you want to extract in the **Key Editor**, **Score Editor**, or **In-Place Editor**.
 2. Select **Project > Chord Track > Create Chord Symbols**.
 3. Make your settings and click **OK**.
-

RESULT

The chord events are added on the chord track.

NOTE

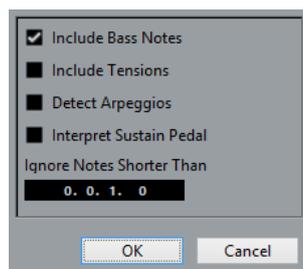
Cubase Pro only: You can now open the **Chord Assistant** to create variations.

RELATED LINKS

[Create Chord Symbols Dialog](#) on page 805

Create Chord Symbols Dialog

This dialog allows you to determine, which MIDI data should be taken into account when extracting chord events from MIDI.



Include Bass Notes

Activate this if you want your chord events to contain a bass note.

Include Tensions

Activate this if you want your chord events to contain tensions.

Detect Arpeggios

Activate this if you want your chord events to contain arpeggiated chords, that is, chords whose notes are played one after another instead of all at once.

Interpret Sustain Pedal

Activate this if you want your chord events to contain sustain pedal chords, that is, notes that are played while the sustain pedal is held.

Ignore Notes Shorter Than

Allows you to determine the minimum length of the MIDI events that are taken into account.

Recording Chord Events with a MIDI Keyboard

You can use a MIDI keyboard to record chord events on the chord track.

PREREQUISITE

Your project contains an instrument track with **Record Enable** or **Monitor** activated.

PROCEDURE

1. On the chord track, activate **Record Enable**.
 2. On the **Transport Panel**, activate **Record**.
 3. Play some chords on your MIDI keyboard.
-

RESULT

All recognized chords are recorded as chord events on the chord track.

NOTE

The chord track uses its own voicing settings. The recorded chord events may therefore sound different.

RELATED LINKS

[Creating Events from Chord Pads](#) on page 828

Chord Pads

Chord pads allow you to play with chords, and to change their voicings and tensions. In terms of harmonies and rhythms, they allow for a more playful and spontaneous approach to composition than the chord track functions.

You can:

- Perform with chords in realtime via a MIDI keyboard.
- Record your performance as MIDI events on a MIDI or instrument track or even on the chord track.

NOTE

We assume that you have a MIDI keyboard connected and set up.

RELATED LINKS

[Voicings](#) on page 798

Chord Pads

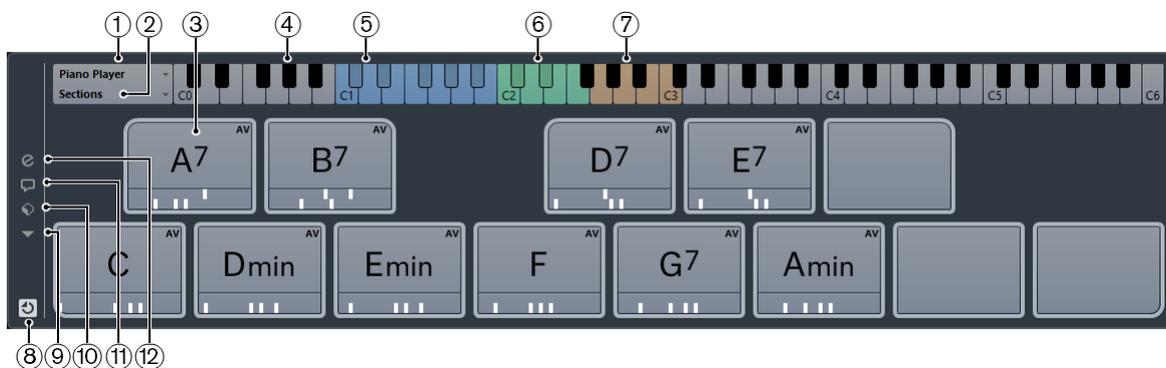
The chord pads in the lower zone of the **Project** window hold all functions that you need to work with chord pads.

To open the chord pads, select **Project > Chord Pads**.

NOTE

You can also select a MIDI or instrument track, and in the Inspector, open the **Chords** section and activate **Show/Hide Chord Pads Zone**.

The chord pads hold the following controls:



1. **Current Player**
Shows the current player and opens a menu where you can select another player.
2. **Current Mode**

Shows the current player mode and opens a menu where you can select another player mode.

3. Chord Pad

Each chord pad can contain a chord symbol. To change it, click the **Open Editor** control on the left edge of the chord pad.

4. Keyboard

Shows which keys are played when you trigger a chord pad. To zoom the keyboard, click a key and drag up or down. To scroll the keyboard, click and drag to the left or to the right.

5. Pads Remote Range

The keys highlighted in blue on the keyboard correspond to the keys on your MIDI keyboard that trigger the chord pads. You can define the remote range on the **Remote Control** page of the chord pad **Settings**.

6. Remote Range for Voicings/Tensions/Transpose

The keys highlighted in green on the keyboard display correspond to the keys on your MIDI keyboard that change the voicings, tensions, and transpose settings of the pads. You can activate and define these remote keys on the **Remote Control** page of the chord pad **Settings**.

7. Section Remote Range

The keys highlighted in brown on the keyboard correspond to the keys on your MIDI keyboard that trigger the sections.

8. Activate/Deactivate Remote Control for Chord Pads

Allows you to activate/deactivate the chord pads. If you deactivate remote control for chord pads, your MIDI keyboard no longer triggers the pads.

9. Functions Menu

Opens a menu with specific functions and settings for the chord pads.

10. Chord Pads Presets

Allows you to save and load presets for chord pads and players.

11. Show/Hide Chord Assistant

Shows/Hides the **Chord Assistant** window that shows suggestions of chords that match the chord that you specified as the origin chord.

12. Show/Hide Settings

Shows/Hides the chord settings, where you can configure different players, the pad layout, and the remote assignment.

RELATED LINKS

[Chord Pad Settings – Remote Control](#) on page 818

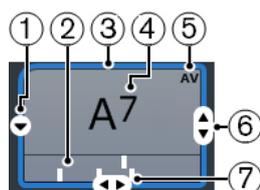
[Players and Voicings](#) on page 825

[Opening Chord Pads](#) on page 67

Chord Pad Controls

The chord pad controls allow you to edit the chord pads.

- To show the chord pad controls, move the mouse over a chord pad.



1. Open Editor

Opens the chord editor that allows you to select a chord for the chord pad.

2. Voicing Indicators

Shows the voicing used for the chord. Voicing indicators can only be displayed if the horizontal zoom level for the chord pads is high enough.

3. Adaptive Voicing Reference/Use X as Origin for Chord Assistant

When the active chord pad is set as adaptive voicing reference, its borders are shown in yellow. All other chord pads will follow its voicing and are set in a way that they do not get too far away from the reference.

If the chord pad is set as origin for the **Chord Assistant** window, its borders are shown in blue. This chord pad is used as a basis for the suggestions in the **Chord Assistant** window.

4. Assigned Chord

Shows the chord symbol that is assigned to the chord pad. Each chord pad can contain one chord symbol. If the name of the assigned chord is too long to display it on the chord pad, it is underlined, and the full chord name is shown in a tooltip.

5. AV (Adaptive Voicing)/L (Lock)

All chord pads follow the adaptive voicing. This is indicated by an AV symbol. If you change the voicing for a pad manually however, adaptive voicing is deactivated.

An L symbol indicates that the chord pad is locked for editing.

6. Voicing

Allows you to set another voicing for the chord pad.

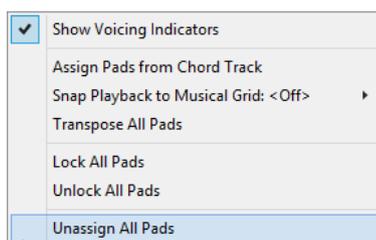
7. Tensions

Allows you to add/remove tensions for the chord.

Chord Pad Context Menu

- **Use X as Origin for Chord Assistant**
Sets the chord of the current pad as an origin chord for the chord assistant.
- **Assign Pad from MIDI Input**
Allows you to assign a chord by pressing keys on your MIDI keyboard.
- **Lock**
Allows you to lock a chord pad for editing.
- **Adaptive Voicing**
Sets the current pad as adaptive voicing reference. If set, the automatic voicings for the following pads will be set in a way that they do not get too far away from the reference voicing. Only one pad can be set as adaptive voicing reference.
- **Adaptive Voicings Reference**
Resets the adaptive voicing reference.
- **Unassign Pad**
Removes the chord assignment from the current pad.

Functions Menu



- **Show Voicing Indicators**
Allows you to activate/deactivate the voicing indicators that can be displayed at the bottom of each chord pad.
- **Assign Pads from Chord Track**
Assigns the chord events from the chord track to the chord pads in the same order as they appear on the chord track. Chord events that have more than one occurrence are only assigned once.
- **Snap Playback to Musical Grid**
Allows you to delay the playback of a triggered chord pad to the next defined musical position. This is useful if you work with an arpeggiator or with the Pattern Player.
- **Transpose All Pads**
Transposes all chord pads by a defined transpose value.
- **Lock All Pads**
Locks all chord pads for editing.
- **Unlock All Pads**
Unlocks all chord pads.
- **Unassign All Pads**
Removes the chord assignment from all pads.

Preparations

Before you can start working with the chord pads, you must add a MIDI or an instrument track with an instrument loaded, and open the chord pads.

PREREQUISITE

You have installed and set up a MIDI keyboard.

PROCEDURE

1. Select **Project > Add Track > Instrument**.
2. In the **Add Instrument Track** dialog, select an instrument, and click **Add Track**.
3. On the instrument track, click **Record Enable**.
4. Select **Project > Chord Pads** to open the **Chord Pads**.

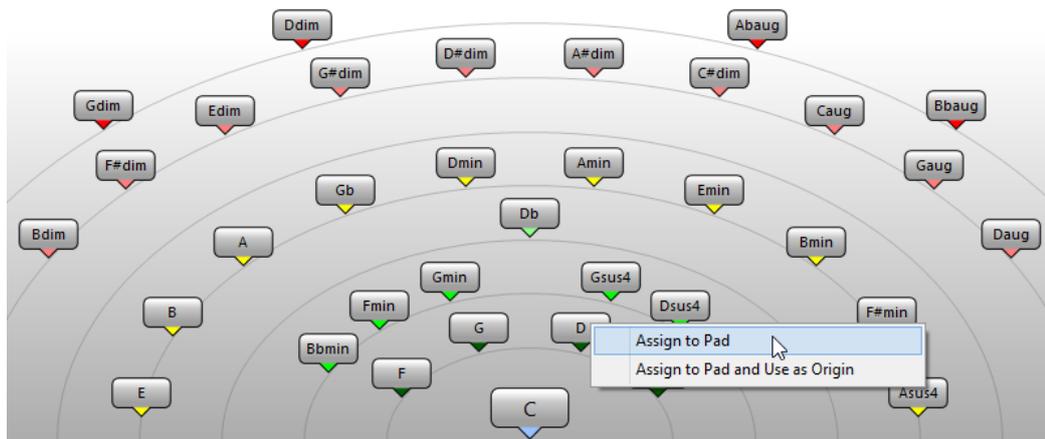
RESULT

You can now click the chord pads or press some of the assigned keys on your MIDI keyboard to trigger the preassigned chords.

Chord Assistant

The **Chord Assistant** allows you to use a chord as a starting point for suggestions for the next chord. It assists you in finding the right chords for creating a chord progression for your song.

- Click **Show/Hide Chord Assistant** on the left side of the chord pads area to open the **Chord Assistant**.



- To play a suggested chord, click it.
The last 3 suggested chords that you clicked are shown with a highlighted border.
- To assign a suggestion to the next unassigned chord pad, right-click the suggested chord and select **Assign to Pad**.
You can also drag the suggested chord and drop it on a chord pad.
- To assign a suggestion to the next unassigned chord pad and use this chord as origin for further suggestions, right-click the suggested chord and select **Assign to Pad and Use as Origin**.

NOTE

The **Proximity** mode is a different representation of the list in the **Chord Assistant** window for the chord track.

RELATED LINKS

[Chord Assistant – List \(Cubase Pro only\)](#) on page 792

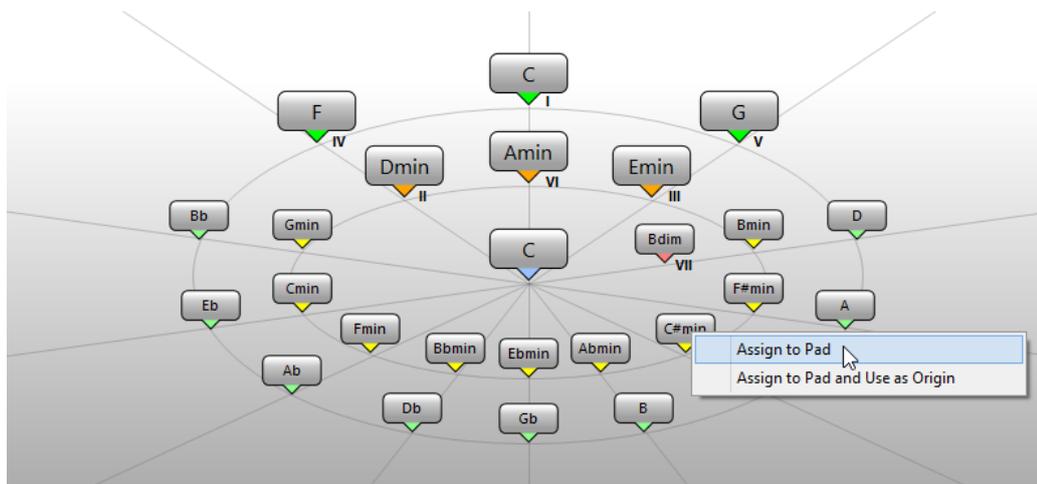
Chord Assistant – Circle of Fifths Mode

The **Circle of Fifths** mode of the **Chord Assistant** window shows the chords in an interactive visualization of the circle of fifths.

The origin chord that defines the current key is shown in the center of the **Chord Assistant** window. The tonic (I) of that key is displayed above the center. The outer circle shows the twelve major chords ordered in intervals of fifths.

The inner circle displays the corresponding parallel minor chords.

The roman numerals mark the chords of the current key with their scale degree. You can use these chords to create typical chord progressions. However, you can also use the other chords for more creative results.



- To play a chord, click it.
The last 3 chords that you clicked are shown with a highlighted border.
- To assign a chord to the next unassigned chord pad, right-click the suggested chord and select **Assign to Pad**.
You can also drag the suggested chord and drop it on a chord pad.
- To assign a suggestion to the next unassigned chord pad and use this chord as origin, right-click the chord and select **Assign to Pad and Use as Origin**.

NOTE

The **Circle of Fifths** is also available in the **Chord Assistant** window for the chord track.

RELATED LINKS

[Chord Assistant – List \(Cubase Pro only\)](#) on page 792

Assigning Chords to Chord Pads

Some chords are preassigned to the chord pads. But you can also assign your own chords.

To assign chords to chord pads, you can use:

- The chord **Editor** window
- The **Chord Assistant – Proximity** window
- The **Chord Assistant – Circle of Fifths** window
- Your MIDI keyboard
- The chord events from the chord track

Unassigning Chord Pads

You can clear all chord pads to start from scratch.

PROCEDURE

- To the left of the chord pads, open the **Functions Menu** and select **Unassign All Pads**.

Assigning Chords with the Chord Editor

If you know exactly which chord you want to assign to a specific chord pad, you can use the chord editor.

PROCEDURE

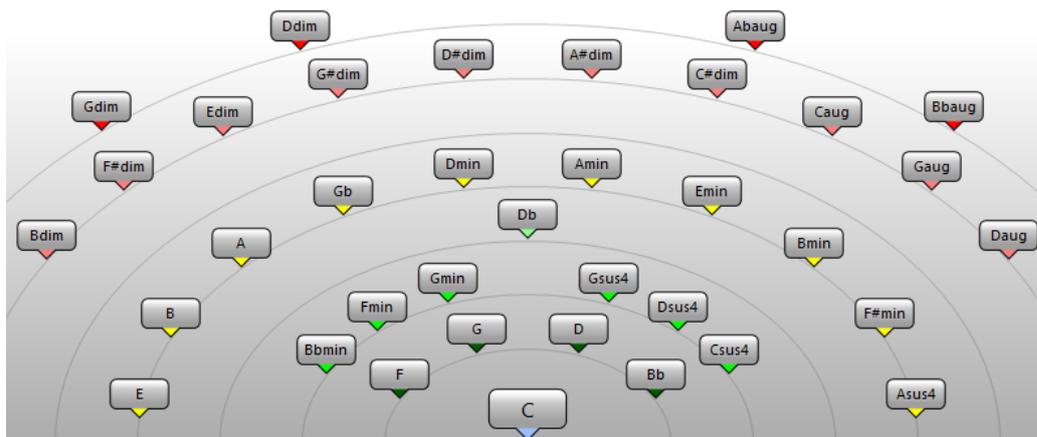
1. Move the mouse pointer to the left edge of the chord pad, and click **Open Editor**.
 2. In the chord **Editor** window, use the chord definition buttons to define a root note, a chord type, a tension, and a bass note.
The new chord is triggered automatically to give an acoustic feedback.
-

Assigning Chords with the Chord Assistant – Proximity Mode (Cubase Pro only)

If you have a chord that you want to use as a starting point to find follow-on chords, you can use the **Chord Assistant – Proximity** window.

PROCEDURE

1. Right-click the chord pad that you want to use as a starting point and activate **Use x as Origin for Chord Assistant**.



The **Chord Assistant** window opens, and the borders of the chord pad change their color to indicate that the assigned chord is now used as origin.

2. In the **Chord Assistant** window, click the chord symbols to trigger corresponding chords. The farther away the chord is from the origin chord that is regarded as the tonal center, the more complex the suggestion becomes.
3. To assign a chord, drag it from the **Chord Assistant** window and drop it on a chord pad.

NOTE

If one of the next chord pads is free, you can also right-click the chord in the **Chord Assistant** window and select **Assign to Pad**. This assigns the chord to the next free pad.

RELATED LINKS

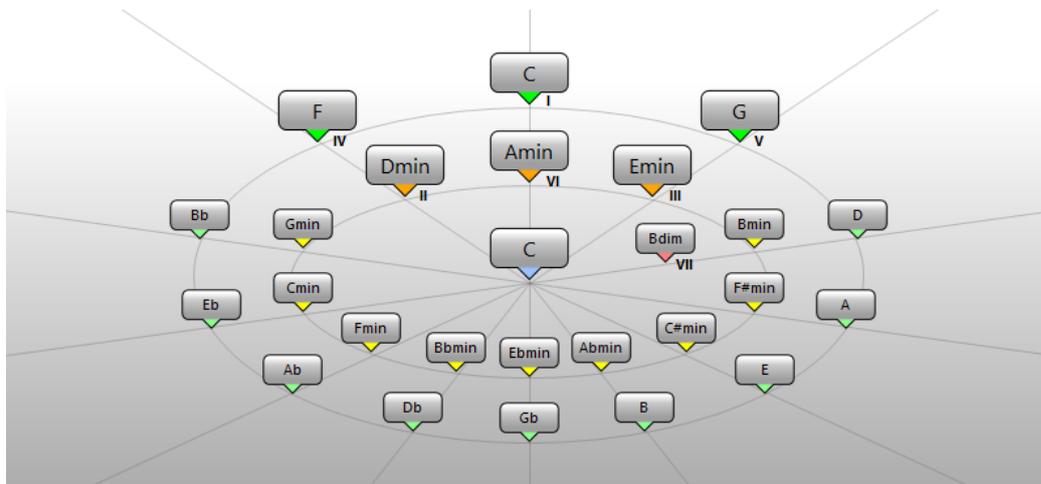
[Chord Assistant – List \(Cubase Pro only\)](#) on page 792

Assigning Chords with the Chord Assistant – Circle of Fifths Mode

If you have a chord that you want to use as a starting point for a chord progression, but you do not know how to create such a progression, you can use the **Chord Assistant – Circle of Fifths** window.

PROCEDURE

1. Right-click the chord pad that you want to use as a starting point and activate **Use x as Origin for Chord Assistant**.



The **Chord Assistant** window opens, and the borders of the chord pad change their color to indicate that the assigned chord is now used as origin.

2. Click **5th** to switch to the circle of fifths mode.
The origin chord is displayed in the center, and the chords that belong to the scale are shown above it. The numerals indicate the scale degree of the chords. These help you to create chord progressions.
3. In the **Chord Assistant** window, click the chord symbols to trigger the corresponding chords.
4. To assign a chord, drag it from the **Chord Assistant** window and drop it on the chord pad.

NOTE

If one of the next chord pads is free, you can also right-click the chord in the **Chord Assistant** window and select **Assign to Pad**. This assigns the chord to the next free pad.

Assigning Chords with the MIDI Keyboard

If you know which chord you want to assign to a specific chord pad, you can use a MIDI keyboard.

PREREQUISITE

You have selected a MIDI track or an instrument track.

PROCEDURE

1. Right-click the chord pad that you want to use for the new chord, and select **Assign Pad from MIDI Input**.
The borders of the chord pad change their color to indicate that it is now ready for recording.
2. On your MIDI keyboard, press the keys for the chord that you want to assign.

The chord and its voicing is assigned to the chord pad, and you hear an acoustic feedback of the chord.

NOTE

The assigned voicing can be changed by the **Adaptive Voicing** setting. Therefore, if you want to keep the voicing for that specific pad, right-click the chord pad and select **Lock** from the context menu.

RELATED LINKS

[Adaptive Voicing](#) on page 825

Assigning Chords from the Chord Track

You can assign the chord events from the chord track to the chord pads.

PROCEDURE

- To the left of the chord pads click the **Functions Menu** button, and select **Assign Pads from Chord Track**.
If chords are already assigned to the chord pads, a warning message informs you that all previous assignments will be overwritten.
-

RESULT

The chord events are assigned to the chord pads in the same order as they appear on the chord track.

NOTE

Chord events that have more than one occurrence on the chord track are only assigned once.

Moving and Copying Chord Pads

You can swap the chord assignments between 2 pads or copy a specific chord and its settings from one pad to another.

- To swap the chord pad assignment between 2 pads, click a chord pad and drag it to another chord pad.
While you drag, the border of the destination chord pad changes its color. When you drop the pad on another, the chord assignments are swapped.
- To copy the chord assignment of one chord pad to another pad, **Alt**-click a chord pad and drag it to another chord pad.
While you drag, the border of the destination chord pad changes its color. When you drop the pad on another, the first pad's assignment is copied to the destination chord pad.

NOTE

When you move or copy chord pads, the chord is moved or copied together with its settings, except for the Adaptive Voicings Reference.

Playing Back and Recording Chords

Playing Back Chord Pads with your MIDI Keyboard

PREREQUISITE

You have connected and set up a MIDI keyboard.

PROCEDURE

1. Select **Project > Add Track > Instrument**.
 2. In the **Add Instrument Track** dialog, select a VST instrument.
 3. Click **Add Track**.
An instrument track with the selected VST instrument is added to your project.
 4. On the instrument track, click **Record Enable**.
 5. Select **Project > Chord Pads** to open the **Chord Pads** at the bottom of the **Project** window.
 6. Press some keys on your MIDI keyboard to trigger the chords that are preassigned to the chord pads.
-

RELATED LINKS

[Chord Pad Settings – Remote Control](#) on page 818

[Changing the Pads Remote Range](#) on page 822

Recording Chords on MIDI or Instrument Tracks

You can record the chords that are triggered through the chord pads on MIDI or instrument tracks. This way, you can play back and edit your performance at any time.

PREREQUISITE

You have connected and set up a MIDI keyboard, you have opened and set up the chord pads, and you have added an instrument or a MIDI track for which a VST instrument is loaded to your project.

PROCEDURE

1. On the instrument track, click **Record Enable**.
2. On the **Transport** panel, activate **Record**.
3. On your MIDI keyboard, press the keys that trigger the chord pads.

NOTE

Use the keys that are not assigned to play and record other chords.

RESULT

The triggered chords are recorded on the track. The note events are automatically assigned to different MIDI channels according to their pitches. Note events that correspond to the soprano voice are assigned to MIDI channel 1, alto is assigned to MIDI channel 2, and so on.

AFTER COMPLETING THIS TASK

You can now open the **Key Editor** and fine-tune your recorded MIDI parts using the chord editing functions, for example. You can also use **MIDI > Dissolve Part** to dissolve the recorded chords by pitches/channels.

Recording Chords on the Chord Track

You can record the triggered chords on the chord track. This way, you can easily create chord events for a lead sheet, for example.

PREREQUISITE

You have connected and set up a MIDI keyboard, you have opened and set up the chord pads, and you have added an instrument or a MIDI track for which a VST instrument is loaded.

PROCEDURE

1. On the instrument track, enable **Monitor**.
2. Select **Project > Add Track > Chord** to add the chord track.
3. In the Inspector for the chord track, click **Record Enable**.
4. On the **Transport** panel, activate **Record**.
5. On your MIDI keyboard, press the keys that trigger the chord pads.

NOTE

Use the keys that are not assigned to play and record other chords.

RESULT

The chord events are recorded on the chord track.

NOTE

The recorded chord events may sound different from the chord pad playback. This is because the voicing settings for the chord track differ from the chord pad voicings.

RELATED LINKS

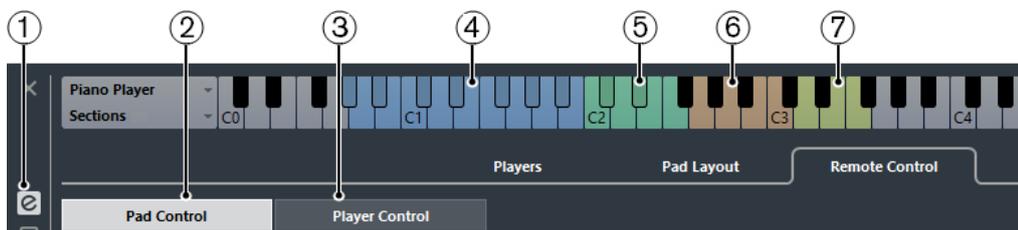
[Chord Functions](#) on page 789

[Voicings](#) on page 798

Chord Pad Settings – Remote Control

On the **Remote Control** tab in the chord pad **Settings**, you can change the remote key assignments.

- To the left of the chord pads, click **Show/Hide Settings** and activate the **Remote Control** tab.



1. **Show/Hide Settings**
Opens the settings for the chord pads.
2. **Pad Control**
Allows you to set up remote keys for the chord pads and for voicings, tensions and transpose control. On the keyboard, these are highlighted in blue and in green.
3. **Player Control**

Allows you to set up remote keys for the section player. On the keyboard, these are highlighted in brown.

4. Pads Remote Range

The keys that are assigned as remote keys for the chord pads are highlighted in blue.

5. Voicings/Tensions/Transpose

The keys that are assigned as remote keys for voicings, tensions and transpose control are highlighted in green.

6. Section Remote Range

The keys that are assigned as remote keys for the sections are highlighted in brown.

7. Subsection Remote Range

The keys that are assigned as remote keys for the subsections are highlighted in light green.

RELATED LINKS

[Pads Remote Range](#) on page 819

[Section Remote Range](#) on page 820

[Section Player](#) on page 823

[Using Different Players on Multiple Tracks](#) on page 827

Pads Remote Range

The pads remote range is the range of remote keys that trigger the chords that are assigned to the chord pads.

- Select **Remote Control > Pad Control** to open the settings for the pads remote range.
- Select **Remote Control** to open the settings for the pads remote range.



1. Pads Remote Range

Allows you to set the start and end note for the remote range.

By default, **Range Start** is set to C1 and **Range End** to B1. This is indicated by the corresponding keys on the keyboard in the chord pads being highlighted in blue. You can trigger the chords that are assigned to the chord pads by hitting the keys that correspond to this note range on your MIDI keyboard.

2. Voicings/Tension/Transpose

Allows you to assign remote keys for changing the voicings, tension, and transposition settings of the last played chord pad. You can also assign continuous controllers to change all chord pads simultaneously.

The remote keys for voicings, tensions, and transpose are highlighted in green.

3. MIDI Learn

Activates/Deactivates the MIDI learn function to assign MIDI input to the pads remote range, and to the parameters for changing voicings, tensions, and transpose.

4. Activate

Activates/Deactivates the remote key assignment for the parameters voicings, tensions, and transpose. If this option is deactivated, only the remote key assignment for the pads remote range is active.

5. Latch Chords

Activate this if you want the chord pad to play back until it is triggered again.

NOTE

- If you use MIDI controllers that are already assigned to other remote control features, for example, the Track Quick Controls or the VST Quick Controls, all previous assignments are lost.
- If you use MIDI controllers that are already assigned to other remote control features, for example, the VST Quick Controls, all previous assignments are lost.

Section Remote Range

The section remote range is the range of remote keys that trigger the chord notes that correspond to the sections.

- Select **Remote Control > Player Control** to open the settings for the section remote range.



1. Sections

Allows you to assign remote keys for up to 5 sections. You can use the section remote keys together with a pad remote key to trigger the chord notes that correspond to the sections. By default, **Section 1** is set to G2, **Section 2** is set to A2, **Section 3** is set to B2, and **Section 4** is set to C3. This is indicated by the corresponding keys on the keyboard in the chord pads being highlighted in brown.

2. Subsections

Allows you to assign remote keys for up to 5 subsections. You can use the subsection remote keys together with a pad remote key to trigger the chord notes that correspond to the section transposed by the offset that is specified by its subsection.

There are no default remote keys for subsections. If you set remote keys for subsections, the corresponding keys on the keyboard in the chord pads are highlighted in light green.

3. Select/Mute Player

Allows you to assign remote keys for player navigation and muting if you use different players on multiple tracks.

4. MIDI Learn

Activates/Deactivates the MIDI learn function to assign MIDI input to sections, subsections, and to the parameters for selecting and muting players.

RELATED LINKS

[Section Player](#) on page 823

Default Remote Assignment

Default Remote Assignment for Pad Control

By default, the MIDI events C1 to B1 trigger the chords that are assigned to the chord pads. All keys that are not assigned for remote control can be used for regular playback.

You can change the voicing, tension, or transposition of the triggered chord by enabling **Activate** in the lower part of the **Remote Control** tab and using the following default remote notes:

Action	Description	Remote Note
Voicings: Previous	Plays back the previous voicing of the last played chord.	C2
Voicings: Next	Plays back the next voicing of the last played chord.	C#2
Voicings for all chord pads	The wheel position determines the voicings for the next played chords of all chord pads.	CC 1 Modulation wheel
Tensions: Less	Plays back the last played chord with less tensions.	D2
Tensions: More	Plays back the last played chord with more tensions.	D#2
Tensions for all chord pads	Allows you to determine the tension level for the next played chord of all chord pads.	CC 16
Transpose: Down	Plays back the last played chord and transposes it downwards.	E2
Transpose: Up	Plays back the last played chord and transposes it upwards.	F2
Transpose all chord pads	The wheel position determines the transposition value for the next played chords of all chord pads. Moving the wheel all the way up or all the way down corresponds to +/-5 semitones.	Pitchbend wheel

Remote assignments are saved globally.

NOTE

If you use the remote keys for voicings, tensions, or transposition after releasing the remote key for the chord pad, the next played chord is affected.

Default Remote Assignment for Player Control

By default, the MIDI events G2 to B2 trigger the chord notes corresponding to the sections.

The remote keys for **Subsections**, and also for selecting or muting players in a multi track project, are not assigned by default.

Remote assignments are saved globally.

Changing the Pads Remote Range

You can widen the pads remote range to access more chord pads. If you want to use a wider key range on your MIDI keyboard for regular playing, you can narrow the pads remote range.

PROCEDURE

1. Select **Show/Hide Settings > Remote Control** to open the remote control assignments.
2. Do one of the following:
 - Click **MIDI Learn** so that the button lights up, and on your MIDI keyboard, press the 2 keys that you want to assign as range start and range end.
 - Enter a new value in the **Range Start** and **Range End** fields.

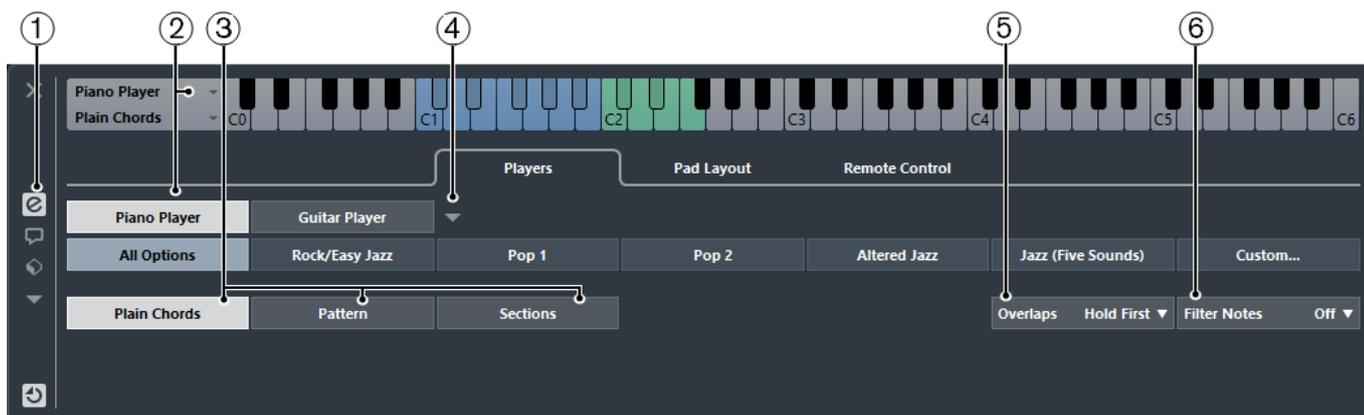
RESULT

On the keyboard, the indication for pads remote range is changed.

Chord Pad Settings – Players

On the **Players** tab in the chord pad **Settings**, you can change the voicing that is used for the chord pads. You can select different players with specific voicing settings that are typical for that kind of player. By default, the **Piano Player** option is active. By selecting **Plain Chords**, **Pattern**, or **Sections**, you can determine how the notes of a chord are played.

- To the left of the chord pads, click **Show/Hide Settings** and activate the **Players** tab.



1. **Show/Hide Settings**
Opens the settings for the chord pads.
2. **Player Selection**
Selects the player, and uses its voicing for the chord pads.
3. **Plain Chords/Pattern/Sections**
 - Select **Plain Chords** to trigger all notes of a chord simultaneously.
 - Select **Pattern** to break up the chords into their individual notes.
 - Select **Sections** to control the playback of single notes or groups of notes of a chord.
4. **Manage Players**

Opens a menu where you can select the player that you want to add. From here, you can also rename or remove the current player.

5. **Overlaps**

When you play a chord without releasing the previous chord, this option allows you to select what happens with the notes of the first chord.

- Select **Hold First** to hold the notes of the first chord. No note-off message is sent. If the chords have common notes, these are not triggered again.
- Select **Legato** to release the notes of the first chord, except for the common notes. These are held and not triggered again.
- Select **Stop First** to release the notes of the first chord including the common notes.

6. **Filter Notes**

Allows you to select which keys are filtered.

- Select **Off** to filter nothing.
- Select **From MIDI Thru** to filter unassigned keys, and keys that are assigned as remote keys for voicings, tensions, and transpose.
- Select **From Chord Pads** to filter keys that are assigned as remote keys for chord pads, voicings, tensions, and transpose.
- Select **All** to filter everything.

RELATED LINKS

[Players and Voicings](#) on page 825

[Voicings](#) on page 798

[Chord Pad Settings – Players](#) on page 822

Section Player

The section player allows you to control the playback of single notes or groups of notes, so called sections, of a chord that is assigned to chord pad.

Sections hold the chord notes, starting from bottom to top: the first section represents the lowest note or voicing of a chord, usually the bass. The second section represents the tenor, and so on.

You can play the sections and their corresponding chord notes by using the remote keys that are assigned to them together with the remote keys that are assigned to a chord pad. To view and edit the assignment, you can open the **Remote Control** tab.

The **Pad Control** tab shows the remote key assignment for the chord pads. The **Player Control** tab shows the remote key assignment for the sections.

RELATED LINKS

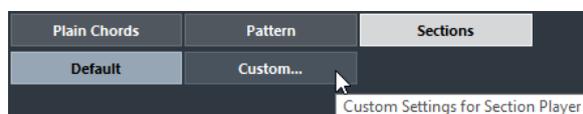
[Chord Pad Settings – Remote Control](#) on page 818

[Custom Settings for Section Player](#) on page 823

Custom Settings for Section Player

The custom settings for the section player allow you to determine how the sections are triggered, how they are distributed, or if they are played at all. Only sections with remote keys assigned are available.

- On the **Players** tab, activate the **Sections** tab and click **Custom**.



The following settings are available:

Play Modes	
<input checked="" type="radio"/>	Sections
<input type="radio"/>	Chord Pads
<input type="radio"/>	Combination
<input checked="" type="checkbox"/>	Latch Chord Pads
Chord Note Distribution	
Distribute additional notes starting at:	Last Section ▼
Force single notes for:	First Section ▼
Mute Sections	
<input type="checkbox"/>	1st
<input type="checkbox"/>	2nd
<input type="checkbox"/>	3rd
<input type="checkbox"/>	4th
<input type="checkbox"/>	5th
Subsection Assignments	
Subsection 1:	assigned to: No Section ▼ Offset: 0 ▲▼
Subsection 2:	assigned to: No Section ▼ Offset: 0 ▲▼
Subsection 3:	assigned to: No Section ▼ Offset: 0 ▲▼
Subsection 4:	assigned to: No Section ▼ Offset: 0 ▲▼
Subsection 5:	assigned to: No Section ▼ Offset: 0 ▲▼

Play Modes

- **Sections**
On your MIDI keyboard, first press a key that is assigned to a chord pad, then press the remote key for a specific section to hear the chord notes that correspond to the section.
- **Chord Pads**
On your MIDI keyboard, first press the remote key for a specific section, then press a key that is assigned to a chord pad to hear the chord notes that correspond to the section.
- **Combination**
Combines sections and chord pads so that it does not matter whether you first press the remote key for the chord pad or for the section.

For sections and combination modes you can activate **Latch Chord Pads**. This way, if you release the remote key for the chord pad you will still hear the sections if you keep the section remote keys pressed.

Chord Note Distribution

Here you can determine how chord notes are distributed among the sections if the chord that is assigned to the chord pad has more notes than sections.

Mute Sections

Activate this option to exclude a section from being played. This is useful if you want to exclude specific voicings from playback.

Subsection Assignments

These are available if you have set up remote keys for subsections on the **Remote Control** tab in the **Player Control** settings.

- Open the **assigned to** pop-up menu to assign a subsection to a section.
- Use the **Offset** controls to specify an offset from the section. This way, when you press the remote key for the subsection, you will hear the chord notes that correspond to the section, transposed by the specified offset.

NOTE

To set **Play Modes**, **Chord Note Distribution**, and **Mute Sections** to their default settings, close the **Custom Settings for Section Player** pane and click **Default**.

Playing Back Chord Sections

You can play back single chord notes or chord sections of a chord pad.

PREREQUISITE

You have added an instrument track with an instrument assigned to your project. You have record-enabled the instrument track. You have a MIDI keyboard connected and set up.

PROCEDURE

1. In the chord pads, activate **Show/Hide Settings**.
2. Open the **Players** tab, and activate **Sections**.

On the keyboard, the remote range for the sections is highlighted in orange.



3. On your MIDI keyboard, press any key that corresponds to the pads remote range. This normally triggers the chord pad, however, in sections mode, you do not hear anything until you press a section remote key.
 4. On your MIDI keyboard, press any key that corresponds to the section remote range.
-

RESULT

The chord section of the chord whose chord pad you triggered is played back. You can press any other key in the section remote range to play different sections of the same chord, or press them all at once. You can use the remote keys for voicing, tension, and transpose to add variety.

Players and Voicings

Different types of instruments and styles have different voicing libraries. These determine how the chords are played back, and which pitches are played. These voicings are referred to as players.

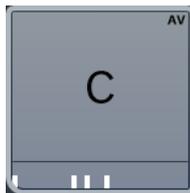
RELATED LINKS

[Voicings on page 798](#)

Adaptive Voicing

In Cubase, the adaptive voicing setting ensures that pitches in chord progressions do not change abruptly.

Adaptive voicing is activated and the voicings of the chord pads are determined automatically according to specific voice leading rules.



If you want to set the voicing of a specific chord pad manually, and do not want it changed automatically, you can use the voicing control to the right of a chord pad. When you assign your own voicing, adaptive voicing is deactivated for that chord pad, so that the pad does no longer follow the voice leading rules of the voicing reference. To activate adaptive voicing again, right-click the chord pad and activate **Adaptive Voicing**.

To lock the voicing for a chord pad, you can right-click the pad and activate **Lock**. This locks this pad for editing and remote control changes, and deactivates **Adaptive Voicing**. To unlock the chord pad again, right-click the pad and deactivate **Lock**.

Pattern Player

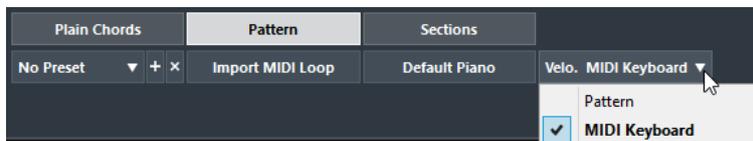
The pattern player allows you to break up the triggered chord to individual notes that are played back one after another (arpeggio).

Using the Pattern Player

The pattern player plays the notes that make up the chord one after another (arpeggio).

PROCEDURE

1. Select **Show/Hide Settings > Players > Pattern**.



2. Perform one of the following actions:
 - Click **Import MIDI Loop** to select a MIDI loop that you want to use as a pattern.
 - Drag a MIDI part from the event display to the **Drop MIDI Part field**.

NOTE

The loop or part must have between 3 and 5 voices. In the **MediaBay**, the number of voices is indicated in the **Voices** column of the result list.

The loop or part is taken as a reference and defines how the chord is played. The **Drop MIDI Part** field displays the name of the selected loop or part.

3. In the **Velocity from:** field, select a velocity source for the notes.
 - Activate **MIDI Keyboard** to determine the velocity values by pressing the keys on your MIDI keyboard harder or softer.
 - Activate **Pattern** to use the velocity values from the MIDI loop or the MIDI part that is selected as a pattern.

AFTER COMPLETING THIS TASK

If you have a pattern that you want to use in other projects, you can save it using the presets section in the pattern player.

RELATED LINKS

- [Assigning Voices to Notes](#) on page 804
- [Setting Up the Results List Columns](#) on page 536

Using Different Players on Multiple Tracks

You can set up different players with different sounds on different tracks. If you record-enable these tracks and play the chord pads, each track uses a dedicated player.

PROCEDURE

1. Select **Project > Add Track > Instrument**.
2. In the **Add Instrument Track** dialog, enter the number of tracks in the **Count** field, and select a VST instrument.
3. Click **Add Track**.
The instrument tracks are added to your project.
4. Select **Project > Chord Pads** to open the chord pads.
5. To the left of the chord pads, activate **Show/Hide Settings** and click **Players**.
6. Select the first instrument track, select a sound on the VST instrument, and in the chord pads, select a player.
For example, select a piano sound and assign a **Piano Player**.

NOTE

When setting up the player for a track, make sure that **Record Enable** or **Monitor** is only active for this particular track.

7. Select the second instrument track, select a sound on the VST instrument, and set up another player.
For example, select a guitar sound and assign a **Guitar Player**.
8. Select the next instrument track, and proceed as for the other 2 tracks.
For example, select a string sound and assign a **Basic Player**.
9. Select all instrument tracks, and click **Record Enable**.

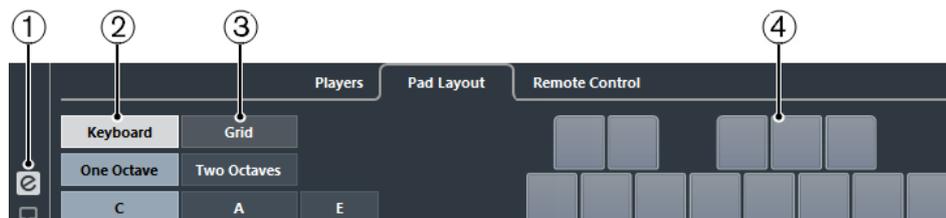
RESULT

You can now play the chord pads and use the remote control parameters for tensions and transpose to change all chord symbols for each player simultaneously. However, if you change the **Voicing**, only the selected player is affected.

Chord Pad Settings – Pad Layout

The **Pad Layout** tab in the chord pad **Settings** allows you to change the layout that is used for the chord pads. By default, the keyboard layout is active, but you can change to a grid layout if you prefer that. After changing the pad layout you may need to adjust the remote setup.

- To the left of the chord pads, click **Show/Hide Settings** and activate the **Pad Layout** tab.



1. **Show/Hide Settings**

Opens the settings for the chord pads.

2. **Keyboard**

Activate this to show the chord pads in a keyboard layout. You can display 1 or 2 octaves, and you can select if the first chord pad starts with C, A or E.

3. **Grid**

Activate this to show the chord pads in a grid layout. You can display up to 4 rows and 16 columns.

4. **Layout display**

Shows how the active chord pad layout is displayed.

Chord Pads Presets

Chord pads presets are templates that can be applied to newly created or to existing chord pads.

Chord pads presets contain the chords that are assigned to the chord pads, as well as the player configurations including any pattern data that you have imported via the **MediaBay** or by using drag & drop. The chord pads presets allow you to quickly load chords, or reuse player settings. The chord pads presets menu is located to the left of the chord pads. Chord pads presets are organized in the **MediaBay**, and you can categorize them with attributes.

- To save/load a chord pads preset, select **Chord Pads Presets > Save/Load Chord Pads Preset**.

You can also load only the assigned chords from a chord pads preset, without loading the player configurations. This is useful if you want to use specific chords that you have saved as a preset, but do not want to alter your current player setting.

- To load only the chords of a chord pads preset, select **Chord Pads Presets > Load Chords from Preset**.

In the same way, you can also load only the player configurations of a chord pads preset. This is useful if you have saved very complex player settings and want to reuse them on other chord pads without changing the assigned chords.

- To load only the player settings of a chord pads preset, select **Chord Pads Presets > Load Players from Preset**.

Saving Chord Pads Presets

If you have set up the chord pads, you can save them as chord pads presets.

PROCEDURE

1. To the left of the chord pads, select **Chord Pads Preset > Save Chord Pads Preset**.
2. In the **New Preset** section, enter a name for the new preset.

NOTE

You can also define attributes for the preset.

3. Click **OK** to save the preset and exit the dialog.
-

Creating Events from Chord Pads

You can use the chords assigned to the chord pads to create chord events or MIDI parts in the **Project** window.

- To create a chord event, drag a chord pad and drop it on the chord track.

- To create a MIDI part with the length of one bar, drag a chord pad and drop it on a MIDI or instrument track.

RELATED LINKS

[Recording Chord Events with a MIDI Keyboard](#) on page 806

The Logical Editor

Introduction

Most of the time you will perform your MIDI editing graphically in one of the MIDI editors. But there are times when you want more of a “search and replace” function on MIDI data, and that’s where the Logical Editor comes in.

IMPORTANT

The Logical Editor is only available in Cubase Pro. However, the Transformer MIDI effect and the Input Transformer that share many of the functions with the Logical Editor are also available in Cubase Artist.

The principle of the Logical Editor is this:

- You set up filter conditions to find certain elements.
This can be elements of a certain type, with certain attributes or values or on certain positions, in any combination. You can combine any number of filter conditions and make composite conditions using And/Or operators.
- You select the basic function to be performed.
The options include Transform (changing properties of the found elements), Delete (removing the elements), Insert (adding new elements based on the found positions of other elements) and more.
- You set up a list of actions, which specify exactly what is done.
This is not necessary for all functions. For example, the Delete function does not require any additional action specifications – it simply removes all found elements. The Transform function on the other hand requires that you specify which properties are changed and in which way (transpose notes by a certain amount, adjust velocity values, etc.).

By combining filter conditions, functions and the specific actions, you can perform very powerful processing.

To master the Logical Editor, you need some knowledge about how MIDI messages are structured. However, the Logical Editor also comes with a rich selection of presets, allowing you to access its processing powers without delving into its more complicated aspects.

IMPORTANT

Studying the included presets is an excellent way to learn the workings of the Logical Editor! Many of them can also be used as starting points when you set up your own editing operations using the Logical Editor.

RELATED LINKS

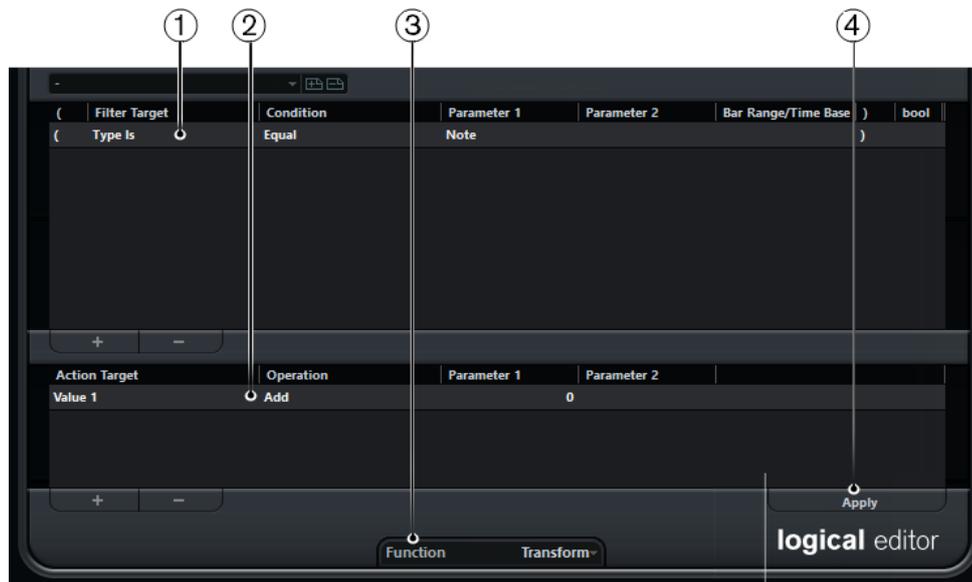
[Working with presets](#) on page 845

Opening the Logical Editor

PROCEDURE

1. Select the desired parts or events.
What will be affected by the operation depends on the current selection.
 - In the Project window, edits using the Logical Editor are applied to all selected parts, affecting all events (of the relevant types) in them.
 - In the MIDI editors, edits using the Logical Editor are applied to all selected events. If no events are selected, all events in the edited part(s) will be affected.You can change the selection while the Logical Editor window is open.
 2. Select "Logical Editor..." from the MIDI menu.
-

Window overview



1. Filter conditions list
2. Action list
3. Function pop-up menu
4. Apply button (not available in the Transformer)

Setting up filter conditions

General procedure

The upper list is where you set up the filter conditions, determining which elements to find. The list can contain one or several conditions, each on a separate line.

- To add a new condition, click the "+" button below the list.
A new line is added at the bottom of the list. If there are many lines, you may need to use the scrollbar to the right to view them.
- To remove a condition, select it and click the "-" button below the list.

NOTE

If you have already defined filter conditions and/or applied a preset, but want to start again from scratch, you can initialize the settings by selecting the Init option from the Presets pop-up menu.

You set up a filter condition line by clicking in the columns and selecting options from the pop-up menus that appear. Here is a brief description of the columns:

Left bracket

This is used for “bracketing” several lines together when creating conditions with multiple lines and the boolean operators And/Or.

Filter Target

Here you select which property to look for when finding elements. Your choice here affects the available options in the other columns as well.

Condition

This determines how the Logical Editor compares the property in the Filter Target column to the values in the Parameter columns (see below). The available options depend on the Filter Target setting.

Parameter 1

Here you set which value the element properties are compared to (depending on the Filter Target).

For example, if the Filter Target is “Position” and Condition is “Equal”, the Logical Editor will look for all elements starting at the position you specify in the Parameter 1 column.

Parameter 2

This column is used if you have selected one of the “Range” options in the Condition column. This allows you to find all elements with values inside (or outside) the range between Parameter 1 and Parameter 2.

Furthermore, if you want to find certain VST 3 events (Filter Target set to “Type is” and Parameter 1 set to “VST 3 Event”), you can use the Parameter 2 column to specify the VST 3 parameter that you are searching for, e. g. Tuning.

Bar Range/Time Base (Logical Editor only)

This column is only used if the Filter Target is set to “Position”. If one of the “Bar Range” options is selected in the Condition column, you use the Bar Range/Time Base column to specify “zones” within each bar (for example, allowing you to find all elements on or around the first beat of every bar). If any of the other Condition options is selected, you can use the Bar Range/Time Base column to specify the time base (PPQ, Seconds, etc.).

Right bracket

This is used for “bracketing” several lines together.

bool

This allows you to insert the boolean operators And/Or, when creating conditions with multiple lines.

You can also set up filter conditions by dragging MIDI events directly into the upper list.

If the list contains no entries, a MIDI event dragged into this section will form conditions including the state and type of the event. If it contains entries, the dragged event will initialize

the matching parameters. For example, if a length condition is used, the length will be set according to the length of the event.

RELATED LINKS

[Combining multiple condition lines](#) on page 856

[Searching for elements at certain positions \(Logical Editor only\)](#) on page 834

Conditions

Depending on the Filter Target setting, the following options can be selected in the Condition column:

Equal

...has the exact same value as set up in the Parameter 1 column.

Unequal

...has any value other than the one set up in the Parameter 1 column.

Bigger

...has a value higher than the one set up in the Parameter 1 column.

Bigger or Equal

...has a value that is the same as or higher than the one set up in the Parameter 1 column.

Less

...has a value lower than the one set up in the Parameter 1 column.

Less or Equal

...has a value that is the same as or lower than the one set up in the Parameter 1 column.

Inside Range

...has a value that is between the values set up in the Parameter 1 and Parameter 2 columns. Note that Parameter 1 should be the lower value and Parameter 2 the higher.

Outside Range

...has a value that is not between the values set up in the Parameter 1 and Parameter 2 columns.

Inside Bar Range (Logical Editor only)

...is within the "zone" set up in the Bar Range/Time Base column (Position only), in each bar within the current selection.

Outside Bar Range (Logical Editor only)

...is outside the "zone" set up in the Bar Range/Time Base column (Position only), in each bar within the current selection.

Before Cursor (Logical Editor only)

...is before the song cursor position (Position only).

Beyond Cursor (Logical Editor only)

...is after the song cursor position (Position only).

Inside Track Loop (Logical Editor only)

...is inside the set track loop (Position only).

Inside Cycle (Logical Editor only)

...is inside the set cycle (Position only).

Exactly matching Cycle (Logical Editor only)

...exactly matches the set cycle (Position only).

Note is equal to

...is the note specified in the Parameter 1 column, regardless of octave (Pitch only).
For example, lets you find all C notes, in all octaves.

NOTE

The Conditions for the "Property" filter target are different.

Below, the different Filter Targets (and their corresponding Condition and Parameter options) are described in more detail.

RELATED LINKS

[Searching for properties](#) on page 837

Searching for elements at certain positions (Logical Editor only)

Selecting "Position" in the Filter Target column lets you find elements starting at certain positions, either relative to the start of the song or within each bar.

- If you select any condition other than the Range or Bar Range options, you set up a specific position (in PPQ, seconds, samples, or frames) in the Parameter 1 column. Use the Bar Range/Time Base column to specify the time base.

Filter Target	Condition	Parameter 1
Position	Equal	1.01.01.000

Here, the Logical Editor will find all elements at 1.1.1.0 in the project.

- If you select Inside Range or Outside Range in the Condition column, you set the start position of the range in the Parameter 1 column and the end position in the Parameter 2 column. You can also change the time base using the Bar Range/Time Base column. The Logical Editor will then find all elements inside or outside this position range.
- If you select one of the Bar Range options in the Condition column, the Bar Range/Time Base column will show a graphic bar display. You specify the range within the bar by clicking and dragging in the bar display (the specified Bar Range is highlighted). The Logical Editor will then find all elements starting inside or outside this Bar Range, in all bars (within the current selection).

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base
Position	Inside Bar Range	391	491	

Here, the Logical Editor will find elements starting around the second beat in each bar.

Searching for notes of certain lengths (Logical Editor only)

Only note events have lengths (actually, a note is made up of separate note-on and note-off events but in Cubase it is considered as a single event with a length). Therefore, the "Length" Filter Target is only valid if you are specifically searching for notes – there has to be another condition line with the Filter Target "Type", Condition "Equal" and Parameter 1 set to "Note".

RELATED LINKS

[Combining multiple condition lines](#) on page 856

Searching for Value 1 or Value 2

A MIDI event is composed of several values. What is displayed for Value 1 and 2 depends on the type of event:

Event type	Value 1	Value 2
Notes	The Note Number/Pitch.	The velocity of the note.
Poly Pressure	The key that was pressed.	The amount of pressure for the key.
Controller	The type of Controller, displayed as a number.	The amount of Control Change.
Program Change	The Program Change number.	Not used.
Aftertouch	The amount of pressure.	Not used.
Pitchbend	The "fine-tune" of the bend. Not always used.	The coarse amount of bend.
VST 3 Event	Not used.	The value of the VST 3 Event parameter. The value range of the VST 3 event (0.0 to 1.0) is transformed into the MIDI value range (0-127), i. e., the VST 3 event value 0.5 corresponds to 64. For some operations that require a higher resolution, you can make use of the "VST 3 Value Operation" parameter.

NOTE

System Exclusive events are not included in the table above, because they do not use value 1 and 2.

Because value 1 and 2 have different meanings for different events, searching for value 2 = 64 would both find notes with the velocity 64 and controllers with the amount 64, etc. If this is not what you want, you can add an additional filter condition line with the Filter Target "Type", specifying which type of events to find (see below).

IMPORTANT

This is particularly useful when searching for note pitch or velocity values, as described below.

The general procedures when searching for value 1 or 2 are:

- If you select any Condition other than the Range options, you set up a specific value in the Parameter 1 column.

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base)
(	Value 2	Less		80)

Here, the Logical Editor will find all events with a value 2 less than 80.

- If you select Inside Range or Outside Range in the Condition column, the range consists of the values between Parameter 1 and Parameter 2.
Note that Parameter 1 should have the lower value.

RELATED LINKS

[Action Target](#) on page 857

Searching for note pitch or velocity

If you add another condition line with the Filter Target “Type”, Condition “Equal” and Parameter 1 set to “Note”, the Logical Editor will “know” you are searching for pitch or velocity.

This has the following benefits:

- The Filter Targets Value 1 and Value 2 will be displayed as “Pitch” and “Velocity” respectively, making it easier to grasp the function of the filter condition.
- Pitch values in the Parameter columns will be displayed as note names (C3, D#4, etc.). When entering pitch values you can either type a note name or a MIDI note number (0–127).
- When Value 1 (pitch) is selected as Filter Target, an additional option appears in the Condition column: “Note is equal to”. When this is selected, you specify a note name in the Parameter 1 column but without any octave number (C, C#, D, D#, etc.). The Logical Editor can then find all notes of a certain key, in all octaves.

RELATED LINKS

[Combining multiple condition lines](#) on page 856

Searching for controllers

There is similar extended functionality when searching for controllers: If you have added an additional “Type = Controller” condition line, the Logical Editor will “know” you are searching for controllers. The Parameter 1 column will then show the names of the MIDI controllers (Modulation, Volume, etc.) when Value 1 is selected as Filter Target.

Searching for MIDI channels

Each MIDI event contains a MIDI channel setting (1–16). Normally, these settings are not used, since the MIDI event plays back on the MIDI channel set for its track.

However, you can come across MIDI parts with events set to different channels, for example in the following scenarios:

- If you have recorded MIDI from an instrument sending on several different channels (e. g. a master keyboard with different key zones).
- If you have imported a MIDI file of type 0 (with a single track, containing MIDI events with different channel settings).

Searching for MIDI channel values is straightforward; you select a Condition and enter a MIDI channel (1–16) in the Parameter 1 column (and if you have selected one of the Range Conditions, a higher channel in the Parameter 2 column, creating a value range).

Searching for element types

Selecting Type as the Filter Target allows you to find elements of a certain type only.

- The Condition column contains only 3 options: Equal, Unequal and All Types.
- Clicking the Parameter 1 column displays a pop-up menu, listing the available types (Note, Poly Pressure, Controller, etc.).

The Logical Editor will find all elements matching or not matching the selected type (depending on the Condition).

IMPORTANT

As mentioned above, selecting Type = Note or Type = Controller adds some additional functionality to the Logical Editor. You should make it a habit to add a Type condition when applicable.

Searching for properties

On the Filter Target pop-up menu, you will find an option called Property. This allows you to search for properties that are not part of the MIDI standard but rather Cubase-specific settings.

When the Property option is selected, the Condition column has 2 options: "Property is set" and "Property is not set". Which property to look for is selected in the Parameter 1 column. The options are "muted", "selected", "empty", "inside NoteExp", and "valid VST 3". Some examples:

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base
Property	Property is set	Event is muted		

Here, the Logical Editor will find all muted events.

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base
Property	Property is set	Event is selected		
Property	Property is set	Event is muted		

Here, the Logical Editor will find all events that are selected and muted.

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base
Type Is	Unequal	Note		
Property	Property is set	Event inside NoteExp		

Cubase Pro only: Here, the Logical Editor will find all Note Expression data.

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base
Type Is	Equal	Controller		
Property	Property is set	Event inside NoteExp		

Cubase Pro only: Here, the Logical Editor will find all MIDI controller events that form part of Note Expression data.

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base
Type Is	Equal	VST3 Event	All Types	
Property	Property is set	Event is valid VST3		

Cubase Pro only: Here, the Logical Editor will find all VST 3 events that cannot be played back, because there is no Note Expression compatible VST instrument on the related track.

Searching for event contexts

On the Filter Target pop-up menu, you will find an option called "Last Event". This can be used to perform context-dependent searches (especially useful in the Input Transformer).

"Last Event" indicates the state of an event which has already passed the Input Transformer/ Logical Editor. The condition has to be combined with Parameter 1 and Parameter 2.

Below, you will find a few examples on how the Last Event filter target can be used.

Here, the action will only be performed when the sustain pedal is down:

Filter Target	Condition	Parameter 1	Parameter 2
Last Event	Equal	MIDI Status	176/Controller

Filter Target	Condition	Parameter 1	Parameter 2
Last Event	Equal	Value 1	64
Last Event	Bigger	Value 2	64

In this example, the action will be performed when the note C1 is pressed (the "Note is playing" condition is only available in the Input Transformer and in the Transformer effect):

Filter Target	Condition	Parameter 1	Parameter 2
Type is	Equal	Note	
Last Event	Equal	Note is playing	36/C1

In this example, the action will be performed after playing the C1 note:

Filter Target	Condition	Parameter 1	Parameter 2
Last Event	Equal	Value 1	36/C1

Cubase Pro only: In this example, the action will be performed for Note Expression VST 3 Tuning events that are attached to a C1 note when C1 is pressed:

Filter Target	Condition	Parameter 1	Parameter 2
Type is	Equal	VST 3 Event	Tuning
Last Event	Equal	MIDI Status	144/Note On
Last Event	Equal	Value 1	36/C1

Searching for Chords (Logical Editor only)

NOTE

A note belongs to a chord if at least 2 other notes play at the same time.

The Context Variable option on the Filter Target pop-up menu allows you to search for chords in a MIDI part or on the chord track.

When Context Variable is selected, the Condition column shows the following options: Equal, Unequal, Bigger, Bigger or Equal, Less, Less or Equal, Inside Range, Outside Range.

Parameter 1 allows you to specify which context variable is searched:

Parameter 1	Searches for...
Highest/Lowest/Average Pitch	...notes with the highest, lowest or average pitch in the selected MIDI part.

Parameter 1	Searches for...
Highest/Lowest/Average Velocity	...notes with the highest, lowest or average velocity in the selected MIDI part.
Highest/Lowest/Average CC Value	...controllers with the highest, lowest or average value in the selected MIDI part.

For the following values of Parameter 1 you have to specify a Parameter 2:

Parameter 1	Parameter 2	Searches for...
No. of Notes in Chord (Part)	Enter a value for the number of notes in the chord.	...chords with the specified number of notes in the selected MIDI part.
No. of Voices (Part)	Enter a number for the number of voices of the chord.	...chords with the specified number of voices in the selected MIDI part.
Position in Chord (Part)	Select the position (interval) in the chord.	...the specified chord interval in the selected MIDI part.
Note Number in Chord (lowest = 0)	Enter a number for the voicing number of chord.	...the specified voicing number in the selected MIDI part.
Position in Chord (Chord track)	Select the position (interval) in the chord.	... the specified chord interval in the selected MIDI part. The Chord track is taken as reference.
Voice	Select a voice in the chord.	...the specified voice in the selected MIDI part.

The Musical Context presets give you an idea of the possibilities of this filter target.

RELATED LINKS

[Conditions](#) on page 833

[Working with presets](#) on page 861

Combining multiple condition lines

As described above, you can add condition lines by clicking the “+” button below the list. The result of combining condition lines depends on the boolean And/Or operators and the brackets.

The bool column

By clicking in the “bool” column to the right in the list, you can select a boolean operator: “And” or “Or”.

A boolean operator combines 2 condition lines and determines the result in the following way:

- If 2 condition lines are combined with a boolean And, both conditions must be fulfilled for an element to be found.

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
(	Type Is	Equal	Note			)	And
	Position	Equal	3.01.01.000	PPQ)	

The Logical Editor will only find elements that are notes and start at the beginning of the third bar.

- If 2 condition lines are combined with a boolean Or, one of the conditions (or both) must be fulfilled for an element to be found.

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
(	Type Is	Equal	Note			)	Or
	Position	Equal	3.01.01.000	PPQ)	

The Logical Editor will find all events that are notes (regardless of their position) and all events starting at the beginning of the third bar (regardless of their type).bar.

When you add a new condition line, the boolean setting defaults to And. Therefore, if all you want to do is set up 2 or more conditions that all must be met for an element to be found, you do not have to think about the boolean column – just add the required lines and make the usual filter settings.

Using brackets

The bracket (parenthesis) columns let you enclose 2 or more condition lines, dividing the conditional expression into smaller units. This is only relevant when you have 3 or more condition lines and want to use the boolean Or operator.

This is how it works:

- Without brackets, the conditional expressions are evaluated according to their order in the list.

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
(	Type Is	Equal	Note			)	And
	Pitch	Equal	C3			)	Or
	Channel	Equal	1)	

In this case the Logical Editor will find all MIDI notes with the pitch C3, as well as all events (regardless of their type) set to MIDI channel 1.

Maybe you wanted to find all notes that either had the pitch C3 or the MIDI channel 1 (but no non-note events)? Then you need to add some brackets:

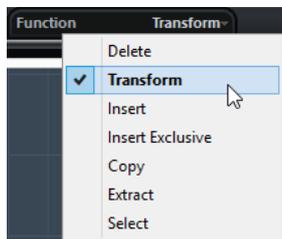
(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
(	Type Is	Equal	Note			)	And
(	Pitch	Equal	C3			)	Or
	Channel	Equal	1)	

- Expressions within brackets are evaluated first.
If there are several layers of brackets, these are evaluated “from the inside out”, starting with the innermost brackets.

You add brackets by clicking in the bracket columns and selecting an option. Up to triple brackets can be selected.

Selecting a function

The pop-up menu at the bottom of the Logical Editor is where you select the function – the basic type of editing to be performed.



Below, the available options are listed. Note that some options are not available in the Transformer effect.

Delete

Deletes all elements found by the Logical Editor. In the case of the Transformer, this function will remove (or “mute”) all found elements from the “output stream” – the actual elements on the track are not affected.

Transform

Changes one or several aspects of the found elements. You set up exactly what is changed in the action list.

Insert

This will create new elements and insert these into the part(s) (Logical Editor) or the output stream (Transformer). The new elements will be based on the elements found by the Logical Editor’s filter conditions, but with any changes you have set up in the action list applied.

Another way of expressing this is that the Insert function copies the found elements, transforms them according to the action list and inserts the transformed copies among the existing elements.

Insert Exclusive

This will transform the found elements according to the action list. Then, all elements that were not found (that did not meet the filter conditions) are deleted (Logical Editor) or removed from the output stream (Transformer).

Copy (Logical Editor only)

This will copy all found elements, transform them according to the action list and paste them into a new part on a new MIDI track. The original events are not affected.

Extract (Logical Editor only)

This works like Copy, but will cut the found events instead. Or in other words, Extract will transform all found events and move them to a new part on a new MIDI track.

Select (Logical Editor only)

This will simply select all found events, highlighting them for further work in the regular MIDI editors.

RELATED LINKS

[Specifying actions](#) on page 842

Specifying actions

The lower list in the Logical Editor window is the action list. This is where you specify any changes that are made to the found events (relevant for all function types except Delete and Select).

Action Target	Operation	Parameter 1	Parameter 2
Value 1	Set to fixed value		2

The handling of the action list is similar to the filter condition list, but without the brackets and booleans. You simply add lines by clicking the "+" button below the list, and fill out the columns as required. To remove a superfluous action line, select it and click the "-" button.

Action Target

This is where you select the property that is changed in the events:

Option	Description
Position (Logical Editor only)	Adjusting this value will move the events.
Length (Logical Editor only)	Lets you resize the events (notes only).
Value 1	This adjusts value 1 in the events. What is displayed for value 1 depends on the event type. For notes, value 1 is the pitch.
Value 2	This adjusts value 2 in the events. What is displayed for value 2 depends on the event type. For notes, value 2 is the velocity value.
Channel	Allows you to change the MIDI channel setting.
Type	Allows you to change the event type, e. g. transform aftertouch events to modulation events, or pitchbend events to VST 3 Tuning events.
Value 3	This adjusts value 3 in the events, which is used for handling of Note-off velocity when searching for properties.
NoteExp Operation (Logical Editor only)	Cubase Pro only: Allows you to specify a Note Expression operation in the Operation column.
VST 3 Value Operation (Logical Editor only)	Allows you to perform common operations within the VST 3 value range (0.0 to 1.0) instead of the standard MIDI value range (0-127), for finer adjustments.

NOTE

The Position and Length parameters are interpreted via the time base setting in the Bar Range/ Time Base column, with the exception of the Random setting, which uses the time base of the affected events.

RELATED LINKS

[Searching for properties](#) on page 855

[Searching for Value 1 or Value 2](#) on page 835

Operation

This setting determines what to do with the Action Target. The options on this pop-up menu are different depending on the selected Action Target.

Below, all available operations are listed:

Add

Adds the value specified in the Parameter 1 column to the Action Target.

Subtract

Subtracts the value specified in the Parameter 1 column from the Action Target.

Multiply by

Multiplies the Action Target value with the value specified in the Parameter 1 column.

Divide by

Divides the Action Target value by the value specified in the Parameter 1 column.

Cubase Pro only: VST 3 Value Operation – Invert (Logical Editor only)

Inverts Note Expression data containing the specified VST 3 event parameter.

Round by

This “rounds” the Action Target value using the value specified in the Parameter 1 column. In other words, the Action Target value is changed to the closest value that can be divided by the Parameter 1 value.

For example, if the Action Target value is 17 and Parameter 1 is 5, the result of rounding will be 15 (the closest value that can be divided by 5). Another word for this type of operation would be “quantizing”, and it is actually possible to use it for this, by setting the Action Target to “Position” and specifying a quantize value with Parameter 1 (in ticks, with 480 ticks per quarter note).

Set Random Values between

This will set the Action Target value to a random value within the range specified with Parameter 1 and 2.

Set to fixed value

This sets the Action Target to the value specified in the Parameter 1 column.

Set Relative Random Values between

This will add a random value to the current Action Target value. The added random value will be within the range specified with Parameter 1 and 2. Note that these can be set to negative values.

For example, if you set Parameter 1 to -20 and Parameter 2 to +20, the original Action Target value will get a random variation, never exceeding ± 20 .

Add Length (Logical Editor only)

This is only available when Action Target is set to Position. Furthermore, it is only valid if the found events are notes (and thus have a length). When Add Length is selected, the length of each note event will be added to the Position value. This can

be used for creating new events (using the Insert function) positioned relative to the end positions of the original notes.

Transpose to Scale

This is only available when Action Target is set to Value 1, and when the filter conditions are specifically set up to find notes (a "Type = Note" filter condition line has been added). When "Transpose to Scale" is selected, you can specify a musical scale using the Parameter 1 and 2 columns. Parameter 1 is the key (C, C#, D, etc.) while Parameter 2 is the type of scale (major, melodic or harmonic minor, etc.).

Each note will be transposed to the closest note in the selected scale.

Use Value 2

This is only available when Action Target is set to Value 1. If this option is selected, the Value 2 setting in each event will be copied to the Value 1 setting.

This is useful, for example, if you are transforming all Modulation controllers to Aftertouch events (since controllers use Value 2 for their amount, while Aftertouch uses Value 1).

Use Value 1

This is only available when Action Target is set to Value 2. If this option is selected, the Value 1 setting in each event will be copied to the Value 2 setting.

Mirror

This is only available when Action Target is set to Value 1 or Value 2. When this option is selected, the values will be "mirrored" around the value set in the Parameter 1 column.

In the case of notes, this will invert the scale, with the key set in the Parameter 1 column as "center point".

Linear Change in Loop Range (Logical Editor only)

This will affect events within the loop range (between the left and right locators) only. It will create a linear "ramp" of values (replacing the original values) starting at the value in the Parameter 1 column and ending at the Parameter 2 value.

This can be used for creating linear controller sweeps, velocity ramps, etc.

Relative Change in Loop Range (Logical Editor only)

As with the previous option, this will create a ramp of values, affecting events in the loop range only (i. e. between the locators). However, here the changes are "relative", meaning that values will be added to the existing values.

In other words, you set up a value ramp starting at Parameter 1 and ending at Parameter 2 (note that the Parameter values can be negative). The resulting value ramp is then added to the existing values for the events within the loop range.

For example, if you apply this to note velocities with Parameter 1 set to 0 and Parameter 2 set to -100, you create a velocity fade-out, keeping the original velocity relations:

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	bool
Type Is	Equal	Note			
+ -					
Action Target	Operation	Parameter 1	Parameter 2		
Value 1	Relative Change in Loop Range	0	-100		

Cubase Pro only: NoteExp Operation – Remove Note Expression (Logical Editor only)

This option is only available for notes. It allows you to remove all Note Expression data from a note.

Cubase Pro only: NoteExp Operation – Create One-Shot (Logical Editor only)

This option is only available for notes. It allows you to add Note Expression data for notes in “One Shot” mode, meaning that you add a parameter as Note Expression data. After having added the one-shot parameter, you have to set it to the desired value in a second go.

Cubase Pro only: NoteExp Operation – Reverse (Logical Editor only)

Reverses the Note Expression data.

RELATED LINKS

[Searching for Value 1 or Value 2](#) on page 835

Applying the defined actions

Once you have set up filter conditions, selected a function and set the required actions (or loaded a preset), you apply the actions defined with the Logical Editor by clicking the Apply button.

IMPORTANT

In the Logical Editor, processing is not performed until you click the Apply button. When using the Transformer MIDI effect, there is no Apply button – the current settings are automatically applied in realtime during playback or live playing.

Logical Editor operations can be undone just like any other editing.

Working with presets

The Presets pop-up menu at the top of the window allows you to load, save, and manage Logical Editor presets.

- To load a preset, select it from the Presets pop-up menu. If available, an explanatory text appears to the right of the menu. When setting up your own presets, you can click in this area and enter a description.
- You can also select Logical Presets directly from the MIDI menu.
This allows you to apply a preset to the selected MIDI part, without having to open the Logical Editor.
- It is also possible to select and apply Logical Presets from within the List Editor (from the Mask menu).
- It is also possible to set up a key command for a preset. That way you can conveniently apply the same operation to several selected events in one go.

RELATED LINKS

[Key Commands](#) on page 938

Storing your own settings as a preset

If you have made Logical Editor settings that you want to use again, you can save them as a preset:

PROCEDURE

1. Click on the Store Preset button on the right of the Preset menu.

A dialog for specifying a name for the new preset is displayed.

2. Enter a name for the preset and click OK.

The preset is stored.

To remove a preset, load it and click on the Remove Preset button.

Organizing and sharing presets

The Logical Editor presets are stored within the application folder in the Presets\Logical Edit subfolder. While these files cannot be edited “manually”, you can reorganize them (e. g. putting them in subfolders) like any files.

This also makes it easy to share presets with other Cubase users, by transferring the individual preset files.

NOTE

The list of presets is read each time the Logical Editor is opened.

Project Logical Editor (Cubase Pro only)

On the Edit menu you will find the function “Project Logical Editor...”. This opens a Project Logical Editor for the entire project. It works similar to the Logical Editor on the MIDI menu. The most important difference is that the Logical Editor for MIDI works at the event level, whereas the Project Logical Editor works at the project level and is therefore a very powerful tool for “search and replace” functions in your entire project.

NOTE

The MIDI events in the MIDI parts will not be affected by the Project Logical Editor operations. If you want to change MIDI notes or controller data, you have to use the Logical Editor.

With the Project Logical Editor, you can combine filter conditions with actions to create complex procedures, e. g. for special track type operations on tracks that are named identically. You can use its functions to delete all muted MIDI parts or to toggle the open state of all folder tracks in your project, etc.

Included with the Project Logical Editor are a number of presets that give you an impression of the great possibilities that this feature offers. Many of them can also be used as starting points when you set up your own editing operations.

The principle for the Project Logical Editor is this:

- You set up filter conditions to find certain elements.
This can be elements of a certain type, with certain attributes or values or on certain positions, in any combination. You can combine any number of filter conditions and make composite conditions using AND/OR operators.
- You select the basic function to be performed.
The options are Transform (changing properties of the found elements), Delete (removing the elements) and Select (selecting the found elements).
- You set up a list of actions, which specify exactly what is done.
This is not necessary for all functions. For example, the Delete function does not require any additional action specifications – it simply removes all found elements.
- In the Macro pop-up menu you can choose an additional macro that will be executed after the actions you defined.
Use this to extend the possibilities offered by combining the filter conditions and actions specified in the Project Logical Editor even further.

By combining filter conditions, functions, the specific actions, and additional macros, you can perform very powerful processing.

IMPORTANT

The Project Logical Editor allows all kinds of settings that may not always make sense. Experiment a bit before applying your edits to important projects. You can undo the operations by using the Undo command on the Edit menu.

RELATED LINKS

[Working with presets](#) on page 861

[The Logical Editor](#) on page 830

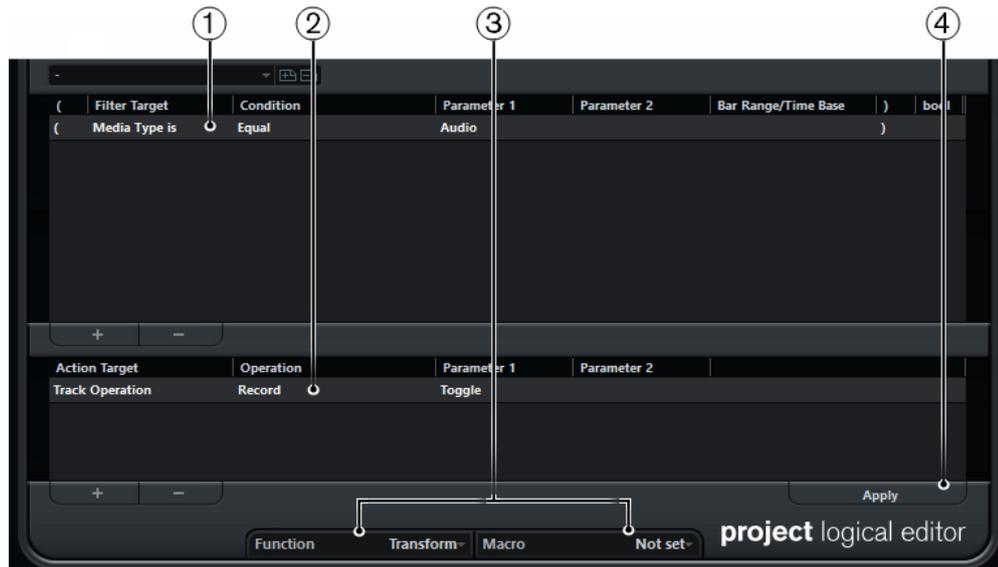
Opening the Project Logical Editor

PROCEDURE

1. Open the desired project.
All elements in the project will be affected, you do not have to make any selection.
2. Select "Project Logical Editor..." from the Edit menu.

Window overview

To understand the Project Logical Editor, it might be a good idea to start by exploring the included presets. These are found on the Presets pop-up menu at the top of the window.



1. List of filter conditions
2. Action List
3. Function and Macro pop-up menus
4. Apply button

RELATED LINKS

[Working with presets](#) on page 861

Setting up filter conditions

General procedure

The upper list is where you set up the filter conditions, determining which elements to find. The list contains one or several conditions, each on a separate line.

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base
Media Type is	Equal	MIDI		
Container Type is	Equal	Track		

- To add a new condition, click the “+” button below the list.
The new line is added at the bottom of the list. If there are many lines, you may need to use the scrollbar to the right to view them.
- To remove a condition, select it and click the Delete button (-) below the list.

NOTE

If you have already defined filter conditions and/or applied a preset, but want to start again from scratch, you can initialize the settings by selecting the Init option from the Presets pop-up menu.

You set up a filter condition line by clicking in the columns and selecting options from the pop-up menus that appear. Here is a brief description of the columns:

Left bracket

This is used for “bracketing” several lines together when creating conditions with multiple lines and the boolean operators And/Or.

Filter Target

Here you select which property to look for when finding elements. Your choice here affects the available options in the other columns as well, see below!

Condition

This determines how the Project Logical Editor compares the property in the Filter Target column to the values in the Parameter columns. The available options depend on the Filter Target setting.

Parameter 1

Here you set which value the element properties are compared to (depending on the Filter Target).

For example, if the Filter Target is “Position” and Condition is “Equal”, the Project Logical Editor will look for all elements starting at the position you specify in the Parameter 1 column.

Parameter 2

This column is only used if you have selected one of the “Range” options in the Condition column. Typically, this allows you to find all elements with values inside (or outside) the range between Parameter 1 and Parameter 2.

Bar Range/Time Base

This column is only used if the Filter Target is set to “Position”. If one of the “Bar Range” options is selected in the Condition column, you use the Bar Range/Time Base column to specify “zones” within each bar (allowing you to find all elements on or around the first beat of every bar, for example). If any of the other Condition options is selected, you can use the Bar Range/Time Base column to specify the time base (PPQ, Seconds, etc.).

Right bracket

This is used for “bracketing” several lines together.

bool

This allows you to insert the boolean operators And/Or, when creating conditions with multiple lines.

Below, the different Filter Targets (and their corresponding Condition and Parameter options) are described in more detail.

RELATED LINKS

[Searching for elements at certain positions](#) on page 853

[Combining multiple condition lines](#) on page 856

Searching for Media types

PROCEDURE

1. Select "Media Type" in the Filter Target pop-up menu.
This allows you to find elements of certain types of media only.
2. Open the pop-up menu in the Parameter 1 column and select the desired option.
3. Open the pop-up menu in the Condition column and select the desired condition.
For example, if you have set up the Project Logical Editor like this...

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base
Media Type is	Equal	Marker		

...it will find all marker events and tracks in the project.

Media type filter

When the Filter Target is set to Media Type, the pop-up menu lists the available media types.

Audio

If no container type is specified, this finds audio events, audio parts and audio tracks.

MIDI

If no container type is specified, this finds MIDI parts and MIDI tracks.

Automation

If no container type is specified, this finds automation events and automation tracks.

Marker

If no container type is specified, this finds marker events and marker tracks.

Transpose

If no container type is specified, this finds transpose events and transpose tracks.

Arranger

If no container type is specified, this finds arranger events and arranger tracks.

Tempo

If no container type is specified, this finds tempo events and tempo tracks.

Signature

If no container type is specified, this finds signature events and signature tracks.

Chord

If no container type is specified, this finds chord events and chord tracks.

Scale Event

If no container type is specified, this finds scale events.

Video

If no container type is specified, this finds video events.

Group

If no container type is specified, this finds group tracks.

Effect

If no container type is specified, this finds FX channel tracks.

For media types, the following options are available:

Equal

This finds the Media Type set up in the Parameter 1 column.

All Types

This finds all Media Types.

Searching for Container types

PROCEDURE

1. Select Container Type in the Filter Target pop-up menu.
This allows you to find parts, events or tracks.
2. Open the pop-up menu in the Parameter 1 column and select the desired option.
3. Open the pop-up menu in the Condition column and select the desired condition.
For example, if you have set up the Project Logical Editor like this...

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base
Container Type is	Equal	FolderTrack		

...it will find all Folder tracks in the project.

Container type filter

When the Filter Target is set to Container Type, the pop-up menu lists the available container types.

Folder Track

This finds all folder tracks, included FX Channel and Group Channel folders.

Track

This finds all track types.

Part

This finds audio, MIDI, and instrument parts. Folder parts will not be found.

Event

This finds automation points, markers, as well as audio, arranger, transpose, tempo and time signature events.

For container types, the following options are available:

Equal

This finds the Container Type set up in the Parameter 1 column.

All Types

This finds all Container Types.

Combining Media Type and Container Type

The combination of the filter targets Media Type and Container Type represents a versatile tool for logical operations:

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
(Media Type is	Equal	MIDI				And
Container Type is	Equal	Part)	

Here, the Project Logical Editor will find all MIDI and instrument parts in the project.

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
(Media Type is	Equal	Automation				And
Container Type is	Equal	Track			)	And
Name	Contains	vol)	

Here, the Project Logical Editor will find all automation tracks (not events) in the project whose name contains vol.

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
(Media Type is	Equal	MIDI				And
Container Type is	Equal	Part			)	And
Property	Not set	Event is muted)	

Here, the Project Logical Editor will find all MIDI and instrument parts (not tracks) in the project that are muted.

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
((Media Type is	Equal	MIDI				And
Container Type is	Equal	Part			)	Or
(Media Type is	Equal	Audio				And
Container Type is	Equal	Event			)	And
Property	Property is not set	Event is muted)	

Here, the Project Logical Editor will find all MIDI and instrument parts (not tracks) or all audio events (not parts or tracks) in the project that are muted.

Searching for Names

PROCEDURE

1. Select Name on the Filter Target pop-up menu.
2. Enter the desired name, or a part of a name in the Parameter 1 column.
3. Open the pop-up menu in the Condition column and select the desired condition.

For names, the following options are available:

- Equal
This is the exact same text string as set up in the Parameter 1 column.
- Contains
This contains the text specified in the Parameter 1 column.

For example, if you have set up the Project Logical Editor like this...

Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
(Container Type is	Equal	Track				And
Name	Contains	voc)	

...it will find all tracks in the project whose name contains "voc".

NOTE

To take maximum advantage of this feature, we recommend using a standard nomenclature in your projects (Drums, Perc, Voc, etc.).

Searching for elements at certain positions

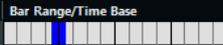
PROCEDURE

1. Select "Position" in the Filter Target pop-up menu.
This allows you to find elements starting at certain positions, either relative to the start of the project or within each bar.
2. Open the pop-up menu in the Condition column and select the desired condition.
 - If you select any condition other than the Range, Bar Range, Cursor, Loop or Cycle options, you set up a specific position (in PPQ, seconds, samples, or frames) in the Parameter 1 column. Use the Bar Range/Time Base column to specify the time base. Note that the position for Bar Range is measured in ticks related to the start of the bar.

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
(	Position	Equal	5.01.01.000		PPQ)	

Here, the Project Logical Editor will find all elements at the PPQ position 5.1.1. in the project.

- If you select Inside Range or Outside Range in the Condition column, you set the start position of the range in the Parameter 1 column and the end position in the Parameter 2 column. You can also change the time base using the Bar Range/Time Base column.
The Project Logical Editor will then find all elements inside or outside this position range.
- If you select one of the Bar Range options in the Condition column, the Bar Range/Time Base column will show a graphic bar display. You specify the range within the bar by clicking and dragging in the bar display (the specified Bar Range is highlighted).

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
	Position	Inside Bar Range	419	541			

Here, the Project Logical Editor will find elements starting around the second beat in each bar.

The Project Logical Editor will then find all elements starting inside or outside this Bar Range, in all bars (within the current selection).

Position filter

For positions, the following options are available:

Equal

...has the exact same value as set up in the Parameter 1 column.

Unequal

...has any value other than the one set up in the Parameter 1 column.

Bigger

...has a value higher than the one set up in the Parameter 1 column.

Bigger or Equal

...has a value that is the same as or higher than the one set up in the Parameter 1 column.

Less

...has a value lower than the one set up in the Parameter 1 column.

Less or Equal

...has a value that is the same as or lower than the one set up in the Parameter 1 column.

Inside Range

...has a value that is between the values set up in the Parameter 1 and Parameter 2 columns. Note that Parameter 1 should be the lower value and Parameter 2 the higher.

Outside Range

...has a value that is not between the values set up in the Parameter 1 and Parameter 2 columns.

Inside Bar Range

...is within the "zone" set up in the Bar Range/Time Base column, in each bar within the current selection.

Outside Bar Range

...is outside the "zone" set up in the Bar Range/Time Base column, in each bar within the current selection.

Before Cursor

...is before the song Project position.

Beyond Cursor

...is after the song Project position.

Inside Track Loop

...is inside the set track loop.

Inside Cycle

...is inside the set cycle.

Exactly Matching Cycle

...exactly matches the set cycle.

RELATED LINKS

[Setting Up the Independent Track Loop](#) on page 495

Searching for elements of certain lengths

PROCEDURE

1. Select Length in the Filter Target pop-up menu.
This allows you to find elements of a certain length only. The Length parameter is interpreted via the time base setting in the Bar Range/Time Base column, i. e. in PPQ, seconds, samples, or frames.
2. Open the pop-up menu in the Condition column and select the desired condition.

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
	Container Type is	Equal	Part				Or
	Container Type is	Equal	Event				And
(	Media Type is	Equal	Audio				And
	Length	Less	0200		Samples)	

Here, the Project Logical Editor will find all audio parts and events in the project with a length smaller than 200 samples.

If you select any condition other than the Range options, you set up a specific position in the Parameter 1 column.

Lengths filter

For lengths, the following options are available:

Equal

...has the exact same value as set up in the Parameter 1 column.

Unequal

...has any value other than the one set up in the Parameter 1 column.

Bigger

...has a value higher than the one set up in the Parameter 1 column.

Bigger or Equal

...has a value that is the same as or higher than the one set up in the Parameter 1 column.

Less

...has a value lower than the one set up in the Parameter 1 column.

Less or Equal

...has a value that is the same as or lower than the one set up in the Parameter 1 column.

Inside Range

...has a value that is between the values set up in the Parameter 1 and Parameter 2 columns. Note that Parameter 1 should be the lower value and Parameter 2 the higher.

Outside Range

...has a value that is not between the values set up in the Parameter 1 and Parameter 2 columns.

Searching for properties

PROCEDURE

1. Select "Property" on the Filter Target pop-up menu.
2. Open the pop-up menu in the Condition column and select the desired condition. When the Property option is selected, the Condition column has 2 options: "Property is set", and "Property is not set".
3. Open the pop-up menu in the Parameter 1 column and select the desired option. This sets which property will be searched.

Some examples:

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
	Media Type is	Equal	MIDI				And
	Container Type is	Equal	Part				And
	Property	Property is set	Event is muted				

Here, the Project Logical Editor will find all muted MIDI and instrument parts.

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
	Media Type is	Equal	Audio				And
	Container Type is	Equal	Part				And
	Property	Property is set	Event is selected				And
	Property	Property is set	Event is empty				

Here, the Project Logical Editor will find all elements that are selected but not muted.

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
	Property	Property is set	Event is selected				And
	Property	Property is not set	Event is muted				

Here, the Project Logical Editor will find all selected audio parts that are empty.

NOTE

Note that “event” in this context refers to all the Project window elements that can be modified, e. g. MIDI parts, audio events and parts, or transpose, arranger, and automation events.

Combining multiple condition lines

As described above, you can add condition lines by clicking the “+” button below the list. The result of combining condition lines depends on the boolean And/Or operators and the brackets.

The bool column

By clicking in the “bool” column to the right in the list, you can select a boolean operator: “And” or “Or”. A boolean operator combines 2 condition lines and determines the result in the following way:

- If 2 condition lines are combined with a boolean And, both conditions must be fulfilled for an element to be found.

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
	Media Type is	Equal	MIDI				And
	Container Type is	Equal	Track				

The Project Logical Editor will only find MIDI tracks.

- If 2 condition lines are combined with a boolean Or, at least one of the conditions must be fulfilled for an element to be found.

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
	Container Type is	Equal	Part				Or
	Container Type is	Equal	FolderTrack				And
	Position	Exactly Matching Cycle			PPQ		

The Project Logical Editor will find all parts or events that match exactly the cycle.

IMPORTANT

When you add a new condition line, the boolean setting defaults to And. Therefore, if all you want to do is set up 2 or more conditions that all must be met for an element to be found, you do not have to think about the boolean column – just add the required lines and make the usual filter settings.

Using brackets

The bracket (parenthesis) columns let you enclose 2 or more condition lines, dividing the conditional expression into smaller units. This is only relevant when you have 3 or more condition lines and want to use the boolean Or operator.

You add brackets by clicking in the bracket columns and selecting an option. Up to triple brackets can be selected.

- Without brackets, the conditional expressions are evaluated according to their order in the list.

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
	Media Type is	Equal	Audio				And
	Name	Contains	perc				Or
	Name	Contains	drums				

Here, the Project Logical Editor will find all audio parts and events whose name contains perc as well as other parts and events (e. g. MIDI parts) whose name contains drums.

Maybe you want to find all audio parts and events that either contain the name perc or the name drums, but no other parts or events that contain the name drums? Then you need to add some brackets:

(	Filter Target	Condition	Parameter 1	Parameter 2	Bar Range/Time Base	)	bool
	Media Type is	Equal	Audio				And
(	Name	Contains	perc				Or
	Name	Contains	drums)	

Here, all audio parts or events will be found whose name contains perc or drums.

NOTE

Expressions within brackets are evaluated first.

If there are several layers of brackets, these are evaluated “from the inside out”, starting with the innermost brackets.

Specifying actions

The lower list in the Project Logical Editor window is the action list. This is where you specify any changes that are made to the found elements, relevant for the function type Transform.

Action Target	Operation	Parameter 1	Parameter 2
Track Operation	Record	Toggle	

You can perform 2 different kinds of actions: track-based actions (such as Track Operation, Name) and event-based actions (such as Position, Length, Name). There are also actions that only take effect on automation data (Trim).

The handling of the action list is similar to the filter condition list, but without the brackets and boolean operators. You simply add lines by clicking the “+” button, and fill out the columns as required. To remove a superfluous action line, select it and click the “-” button.

Action Target

This is where you select the property that is changed. The Operations determine what to do with the Action Target.

Below, all available operations are listed:

Position

Adjusting this value will move the elements. This parameter is interpreted via the time base setting in the Bar Range/Time Base column, with the exception of the Random setting, which uses the time base of the affected events:

Add

Adds the value specified in the Parameter 1 column to the Position.

Subtract

Subtracts the value specified in the Parameter 1 column from the Position.

Multiply by

Multiplies the Position value with the value specified in the Parameter 1 column.

Divide by

Divides the Position value by the value specified in the Parameter 1 column.

Round by

This “rounds” the Position value using the value specified in the Parameter 1 column. In other words, the Position value is changed to the closest value that can be divided by the Parameter 1 value.

For example, if the Position value is 17 and Parameter 1 is 5, the result of rounding will be 15 (the closest value that can be divided by 5). Another word for this type of operation would be “quantizing”, and it is actually possible to use it for this, by specifying a quantize value with Parameter 1 (in ticks, with 480 ticks per quarter note).

Set relative Random Values between

This will add a random value to the current Position value. The added random value will be within the range specified with Parameter 1 and 2. Note that these can be set to negative values.

For example, if you set Parameter 1 to -20 and Parameter 2 to +20, the original Position value will get a random variation, never exceeding ± 20 .

Set to fixed value

This sets the position to the value specified in the Parameter 1 column.

Length

Lets you resize the elements. This parameter is interpreted via the time base setting in the Bar Range/Time Base column, with the exception of the Random setting, which uses the time base of the affected events:

Add

Adds the value specified in the Parameter 1 column to the Length.

Subtract

Subtracts the value specified in the Parameter 1 column from the Length.

Multiply by

Multiplies the Length value with the value specified in the Parameter 1 column.

Divide by

Divides the Length value by the value specified in the Parameter 1 column.

Round by

This “rounds” the Length value using the value specified in the Parameter 1 column. In other words, the Length value is changed to the closest value that can be divided by the Parameter 1 value.

Set to fixed value

This sets the Length to the value specified in the Parameter 1 column.

Set Random Values between

This will add a random value to the current length. The added random value will be within the range specified with Parameter 1 and 2.

Track Operation

This lets you change the track status.

NOTE

Track operations may also affect automation tracks. This may lead to unexpected results, especially if you use the **Toggle** action.

Folder

Opens, closes or toggles folders.

Record

Enables, disables or toggles the record enable status.

Monitor

Enables, disables or toggles the monitor status.

Solo

Enables, disables or toggles the solo status.

Mute

Enables, disables or toggles the mute status.

Read

Enables, disables or toggles the read enable status.

Write

Enables, disables or toggles the write enable status.

EQ Bypass

Enables, disables or toggles the EQ bypass status.

Inserts Bypass

Enables, disables or toggles the inserts bypass status.

Sends Bypass

Enables, disables or toggles the sends bypass status.

Lanes Active

Enables, disables or toggles the lanes active status.

Hide Track

Enables, disables or toggles the track visibility status.

Time Domain

Sets the track time domain to **Musical**, **Linear** or toggles the status.

Name

This lets you rename the found elements.

Replace

Replaces names with the text specified in the Parameter 1 column.

Append

Names will be appended with the string specified in the Parameter 1 column.

Prepend

The name will be prepended with the string specified in the Parameter 1 column.

Generate Name

The name will be replaced by the text specified in the Parameter 1 column, followed by the number set with Parameter 2. The number will be increased by 1 for every found element.

Replace Search String

You can specify a search string under Parameter 1 that is replaced by the text specified in the Parameter 2 column.

Trim

This Action Target is used for automation only and lets you trim the found elements.

Multiply by

Multiplies the Trim value with the value specified in the Parameter 1 column.

Divide by

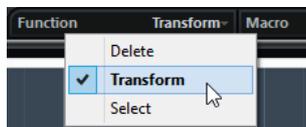
Divides the Trim value by the value specified in the Parameter 1 column.

Set Color

This lets you set the color for an element. For this Action Target the only operation available is "Set to fixed value". To use this, insert the name of a track color in the Parameter 1 column, e. g. "Color 7" to use dark green as track color.

Selecting a function

The left pop-up menu at the bottom of the Project Logical Editor is where you select the function – the basic type of editing to be performed.



The available options are:

Delete

Deletes all elements found by the Project Logical Editor.

NOTE

When you delete automation tracks and undo this operation by selecting Undo from the Edit menu, the automation tracks will be restored, but the tracks will be closed.

Transform

Changes one or several aspects of the found elements. You set up exactly what is changed in the action list.

Select

This will simply select all found elements, highlighting them for further work in the Project window.

Applying Macros

In the Macro pop-up menu you can select a macro that will be executed automatically after completing the actions defined using the Filter and Action lists. This is useful if you would like to extend the already powerful Project Logical Editor features even further.

To use this, you set up the macro that you need in the Key Commands dialog and then select it in the Project Logical Editor from the Macro pop-up menu.

For example, you can use the filter conditions to select all tracks that contain automation data for a certain automation parameter (such as “volume”) and use the macro “Select all on Track + Delete” to remove the automation events from these tracks (without deleting the tracks themselves).

RELATED LINKS

[Setting up key commands](#) on page 939

Applying the defined actions

Once you have set up filter conditions, selected a function and set the required actions (or loaded a preset), you apply the actions defined with the Project Logical Editor by clicking the Apply button.

Project Logical Editor operations can be undone just like any other editing.

Working with presets

The Presets section in the upper left section of the window allows you to load, save and manage Project Logical Editor presets. A preset contains all settings in the window, which means you can simply load a preset, edit the settings (if necessary) and click Apply.

- To load a preset, select it from the Presets pop-up menu. If available, an explanatory text appears to the right of the menu. When setting up your own presets, you can click in this area to enter a description.
- You can also open the Edit menu and select Presets directly from the “Process Project Logical Editor” submenu. This allows you to apply a preset directly, without having to open the Project Logical Editor.
- You can also select Logical Presets directly from the MIDI menu.
This allows you to apply a preset to the selected MIDI part, without having to open the Logical Editor.
It is also possible to select and apply Logical Presets from within the List Editor (from the Show pop-up menu).
- It is also possible to set up a key command for a preset. That way you can conveniently apply the same operation to several selected events in one go.

RELATED LINKS

[The Logical Editor](#) on page 830

[Key Commands](#) on page 938

Storing your own settings as a preset

If you have made Project Logical Editor settings that you want to use again, you can save them as a preset:

PROCEDURE

1. Click the Store Preset button to the right of the Presets pop-up menu.
A dialog for specifying a name for the new preset is displayed.
2. Enter a name for the preset and click OK.
The preset is stored.

NOTE

To remove a preset, load it and click the Remove Preset button.

Organizing and sharing presets

The Project Logical Editor presets are stored within the application folder in the Presets\Logical Edit Project subfolder. While these files cannot be edited manually, you can reorganize them (e. g. putting them in subfolders) like any files.

This also makes it easy to share presets with other Cubase users, by transferring the individual preset files.

NOTE

The list of presets is read each time the Project Logical Editor is opened.

Setting up key commands for your presets

If you have stored Project Logical Editor presets, you can set up key commands for them:

PROCEDURE

1. Open the File menu and select "Key Commands...".
The Key Commands dialog opens.
2. Use the list in the Commands column to navigate to the category "Process Project Logical Editor" and click the "+" sign to display the items in the folder.
3. In the list, select the item to which you want to assign a key command, click in the "Type in Key" field and enter a new key command.
4. Click the Assign button above the field.
The new key command appears in the Keys List.
5. Click OK to exit the dialog.

RELATED LINKS

[Key Commands](#) on page 938

Editing Tempo and Time Signature

Project Tempo Modes

For every project you can set a tempo mode, depending on whether your music has a fixed tempo or if it changes throughout the project.

On the **Transport** panel you can set the following tempo modes:

- **Fixed Tempo Mode**

If you want to work with one fixed tempo that does not change throughout the project, deactivate **Activate Tempo Track** on the **Transport** panel. You can change the tempo value to set a fixed rehearsal tempo.



- **Tempo Track Mode**

If the tempo of your music contains tempo changes, activate **Activate Tempo Track** on the **Transport** panel. You can change the tempo value to change the tempo at the cursor. If your project does not contain any tempo changes, the tempo is changed at the project start.



RELATED LINKS

[Setting up Projects for Tempo Changes](#) on page 867

Track Time Base

The time base of a track determines if a track can follow the tempo changes of a project that is set to tempo track mode.

In the **Inspector** for MIDI tracks, instrument tracks, and audio related tracks, you can activate/deactivate **Toggle Time Base** to switch the track time base.

The following time base modes are available:

- **Musical**

Use this mode for material with a musical, that is, tempo-related time base. All tracks that are set to musical time base follow any tempo changes that you add on the tempo track.

NOTE

For audio events on audio tracks that are set to musical time base, the tempo changes on the tempo track affect only the start position and not the actual audio.

- **Linear**

Use this mode for material with a linear, time-related time base.

RELATED LINKS

[Instrument Track Inspector](#) on page 108

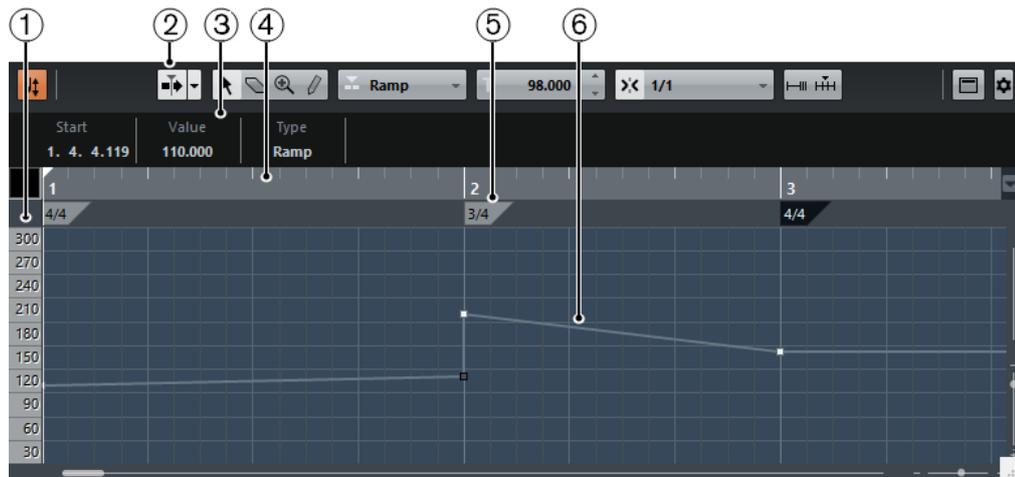
[MIDI Track Inspector](#) on page 115

[Audio Track Inspector](#) on page 101

Tempo Track Editor

The **Tempo Track Editor** provides an overview of the project tempo settings. It allows you to add and edit tempo events.

- To open the **Tempo Track Editor**, select **Project > Tempo Track**, or press **Ctrl/Cmd-T**.



The **Tempo Track Editor** is divided into several sections:

1. **Tempo scale**
Shows the tempo scale in BPM.
2. **Toolbar**
Contains tools for selecting, adding, and changing tempo and time signature events.
3. **Info Line**
Shows information about the selected tempo or time signature event.
4. **Ruler**
Shows the timeline and the display format of the project.
5. **Time signature display**
Shows the time signature events in the project.
6. **Tempo curve display**
If your project is set to a fixed tempo, only one tempo event and a fixed tempo is shown.
If your project is set to tempo track mode, the curve display shows the tempo curve with the tempo events in the project.

Toolbar

The toolbar contains tools for selecting, adding, and changing tempo and time signature events.

The following tools are available:

Activate Tempo Track



Switches the project tempo between fixed tempo mode and tempo track mode.

Show/Hide Info



Opens/Closes the info line.

Tools



Contains tools to select, erase, zoom, and draw.

Auto-Scroll



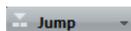
Allows the tempo event display to scroll during playback, keeping the project cursor visible in the editor.

Snap



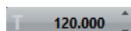
Allows you to restrict horizontal movement and positioning of tempo events to certain positions. Time signature events always snap to the beginning of bars.

Type of New Tempo Points



Allows you to select the type of new tempo points. Select **Ramp** if you want new tempo points to change gradually from the previous curve point to the new one. Select **Jump** if you want new tempo points to change instantly. Select **Automatic** if new tempo points should have the same type as the previous curve point.

Current Tempo



In fixed tempo mode, this allows you to change the current tempo.

Tempo Recording Slider



Allows you to record tempo changes.

Open Process Tempo Dialog



Opens the **Process Tempo** dialog.

Open Process Bars Dialog



Opens the **Process Bars** dialog.

Tempo Track

You can use the tempo track to create tempo changes within a project.

- To add a tempo track to your project, select **Project > Add Track > Tempo**.
- You can use the tools on the **Project** window toolbar to add and edit tempo events.
- You can use the tempo event editor to edit selected tempo events.

- To select a tempo event, click it with the **Object Selection** tool.
- To select multiple events, drag a selection rectangle with the **Object Selection** tool or **Shift**-click the events.
- To select all tempo events on the tempo track, right-click the tempo track and select **Select All Events** from the context menu.

RELATED LINKS

[Tempo Track Inspector](#) on page 149

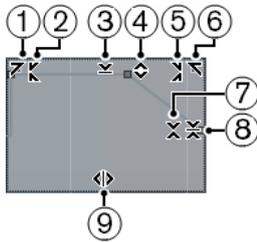
[Tempo Track Controls](#) on page 149

Tempo Event Editor

The tempo event editor allows you to edit selected events on the tempo track.

- To open the tempo event editor, activate the **Object Selection** tool and drag a selection rectangle on the tempo track.

The tempo event editor features the following smart controls for specific editing modes:



1. Tilt Left

If you click in the upper left corner of the editor, you can tilt the left part of the curve. This allows you to tilt the event values at the start of the curve upwards or downwards.

2. Compress Left

If you **Alt**-click in the upper left corner of the editor, you can compress the left part of the curve. This allows you to compress or expand the event values at the start of the curve.

3. Scale Vertically

If you click in the middle of the upper border of the editor, you can scale the curve vertically. This allows you to raise or lower the event values of the curve in percent.

4. Move Vertically

If you click on the upper border of the editor, you can move the entire curve vertically. This allows you to raise or lower the values of the event values of the curve.

5. Compress Right

If you **Alt**-click in the upper right corner of the editor, you can compress or expand the right part of the curve. This allows you to compress or expand the event values at the end of the curve.

6. Tilt Right

If you click in the upper right corner of the editor, you can tilt the right part of the curve. This allows you to tilt the event values at the end of the curve upwards or downwards.

7. Scale Around Relative Center

If you **Alt**-click in the middle right corner of the editor, you can scale the curve relative to its center. This allows you to raise or lower the event values horizontally around the center of the editor.

8. Scale Around Absolute Center

If you click in the middle right corner of the editor, you can scale the curve absolute to its center. This allows you to raise or lower the event values horizontally around the center of the editor.

9. Stretch

If you click on the lower border of the editor, you can stretch the curve horizontally. This allows you to move the event values of the curve to the left or to the right.

Setting up Tempo Changes for Projects

If the tempo track is activated, you can set up tempo changes for your project.

IMPORTANT

If your project is set to tempo track mode and you set up tempo changes, only tracks that are set to musical time base follow the tempo changes.

NOTE

If you work in tempo track mode, make sure that the display format in the **Project** window ruler is set to **Bars+Beats**. Otherwise, you may get confusing results.

If you activate **Activate Tempo Track** in the **Transport** panel, the tempo track curve is displayed in the tempo curve display.

If you know the tempo of your music, you can adjust the tempo value as follows:

- By adding tempo events in the **Tempo Track Editor**.
- By recording tempo changes with the **Tempo Recording slider** on the toolbar of the **Tempo Track Editor**.
- By adding tempo events on the tempo track.
- By importing tempo tracks (Cubase Pro only).

If you do not know the tempo of your music, use one of the following tools to calculate and set it:

- **Tempo Detection Panel** (Cubase Pro only)
- **Time Warp** tool (Cubase Pro only)
- **Process Bars** dialog (Cubase Pro only)
- **Process Tempo** dialog (Cubase Pro only)

RELATED LINKS

[Setting up Projects for Tempo Changes](#) on page 867

Setting up Projects for Tempo Changes

When you create a new project, the project tempo is automatically set to fixed tempo mode. If your music contains tempo changes, you must set your project to tempo track mode.

PROCEDURE

- To set your project to tempo track mode, do one of the following:
 - On the **Transport** panel, activate **Activate Tempo Track**.
 - Select **Project > Tempo Track** and activate **Activate Tempo Track**.
 - Select **Project > Add Track > Tempo** and activate **Activate Tempo Track**.

RESULT

The project tempo is now set up to follow the tempo track.

All tracks that are set to musical (tempo related) time base follow any tempo changes that you add on the tempo track.

RELATED LINKS

- [Track Time Base](#) on page 863
- [Tempo Track Controls](#) on page 149
- [Tempo Track Editor](#) on page 864

Setting up a Tempo Track by Adding Tempo Changes

PROCEDURE

1. Do one of the following:
 - Select **Project > Tempo Track** to open the **Tempo Track Editor**.
 - Select **Project > Add Track > Tempo** to add a tempo track to your project.
2. Open the **Type of New Tempo Points** pop-up menu and select an option.
3. Do one of the following:
 - On the toolbar, select the **Object Selection** tool and click the tempo curve.
 - On the toolbar, select the **Draw** tool, click and drag in the tempo curve display.

NOTE

If **Snap** is activated, this determines at which time positions you can insert tempo curve points.

RESULT

The tempo event is added to the tempo curve.

Setting up a Tempo Track by Recording Tempo Changes (Cubase Pro only)

You can set up a complete tempo track by recording tempo changes. This is useful if you want to create natural sounding ritardandos, for example.

PROCEDURE

1. Open the project for which you want to set up a tempo track and start playback.
 2. Select **Project > Tempo Track**.
 3. On the **Tempo Track Editor** toolbar, use the Tempo Recording Slider to add tempo changes on the fly.
By moving the slider to the right, you can raise the project tempo, by moving it to the left, you can lower it.
-

RESULT

The tempo changes are recorded and added to the tempo curve in the **Tempo Track Editor**.

RELATED LINKS

- [Toolbar](#) on page 864

Setting up a Tempo Track from Tapping (Cubase Pro only)

You can create a complete tempo track based on tapping the tempo of freely recorded audio or MIDI material.

PREREQUISITE

You have opened a project with a freely recorded audio or MIDI file. You have added an instrument track and loaded an instrument. You have connected and set up a MIDI keyboard.

PROCEDURE

1. In the instrument track **Inspector**, deactivate **Toggle Time Base** to set the track time base to linear.
 2. On the instrument track, activate **Record Enable**.
 3. On the **Transport** panel, activate **Record**.
 4. On the MIDI keyboard, tap the tempo by hitting a key to the beat of your music.
 5. Stop recording and play back the recorded MIDI notes together with the original recording to check if the timing is correct.
 6. Do one of the following:
 - Select the MIDI part in the **Project** window.
 - Open the MIDI part in the **Key Editor** and select the notes that you want to use for the calculation.
 7. Select **MIDI > Functions > Merge Tempo From Tapping**.
 8. Open the **Tapping** pop-up menu to specify what type of note you tapped during the recording.
 9. Optional: To start the calculation of the tempo curve at the beginning of a bar, activate **Begin at Bar Start**.
 10. Click **OK**.
-

RESULT

The project tempo is set to the tapped tempo.

AFTER COMPLETING THIS TASK

Open the **Tempo Track Editor** to see and edit the new tempo curve.

RELATED LINKS

[Setting Up All MIDI Inputs](#) on page 21

Setting up a Tempo Track from Tempo Detection (Cubase Pro only)

You can set up a complete tempo track using the result of a tempo detection for an audio event or a MIDI part.

PROCEDURE

1. In the **Project** window, select the audio event or the MIDI part that you want to analyze.
 2. Select **Project > Tempo Detection**.
 3. In the **Tempo Detection Panel**, click **Analyze**.
-

RESULT

- A tempo track is added to the project. On the tempo track, tempo events are created based on the analysis for the selected audio event or MIDI part.

- A signature track is added to the project. On the signature track, a signature event with the value 1/4 is added.
- On the **Project** window toolbar, the **Time Warp** tool is selected.

AFTER COMPLETING THIS TASK

Depending on the rhythmic quality of the material, the analysis may instantly lead to a perfect result. You can verify the quality of the analysis by activating the metronome click in the **Transport** panel, and playing back the project. To correct the result manually, use the functions in the **Tempo Detection Panel**.

RELATED LINKS

[Tempo Detection Panel](#) on page 874

[Correcting the Analysis Manually](#) on page 870

Correcting the Analysis Manually

If your music contains sections that are played in a different tempo or with special rhythmic characteristics, for example, you must adjust the tempo events manually.

PREREQUISITE

You have analyzed your material and the **Tempo Detection Panel** is still open. The metronome click is activated.

PROCEDURE

1. Play back the track with the analyzed material from the beginning and listen to the click.
2. Optional: If you work with an audio event, zoom in on the waveform so that you can compare the transients with the tempo events on the tempo track.
3. Optional: If the first tempo event that is not placed correctly is located at the beginning of the material, click the left arrow button in the **Tempo Detection Panel** to change the direction of the reanalysis.
4. Select the **Time Warp** tool and move the first tempo event that is not placed correctly to the correct position.

RESULT

The material is reanalyzed and the tempo recalculated.

AFTER COMPLETING THIS TASK

Continue listening to the material and correcting tempo events until the end. Close the **Tempo Detection Panel**.

NOTE

If your material includes multiple sections with different tempo, you can also cut the material at each major tempo change and perform a tempo detection for every single resulting section. Remember that each section must have a length of at least 7 seconds.

Editing Tempo Events

In the **Tempo Track Editor**, you can edit selected tempo events.

Use the following methods:

- With the **Object Selection** tool, click and drag horizontally and/or vertically.
- On the **Info Line**, adjust the tempo value in the **Value** field.

NOTE

When editing tempo events on tempo curves, make sure that the display format in the **Project** window ruler is set to **Bars+Beats**. Otherwise, you may get confusing results.

Use the following methods to remove tempo events:

- With the **Erase** tool, click the tempo event.
- Select the tempo event and press **Backspace**.

NOTE

You cannot remove the first tempo event.

Use the following method to change the tempo curve type:

- On the **Info Line**, adjust the tempo curve type in the **Type** field.

Adjusting the Tempo of a Range (Cubase Pro only)

You can adjust the tempo of a range to match a specific length or end time.

PROCEDURE

1. Set the left and right locator to specify the start and the end of the range you want to adjust.
 2. Select **Project > Tempo Track**.
 3. Click **Open Process Tempo Dialog**.
 4. Open the **Time Display Format** pop-up menu and select a time display format for the new range.
 5. In the **New Range** section, enter a new end time or a new length for the range.
 6. Click **Process**.
-

RESULT

The range is adjusted to match the new end time or the new length. The tempo track is adjusted to show the new tempo of the range.

Setting up a Fixed Project Tempo

If your music does not contain tempo changes, and the tempo track is deactivated, you can set up a fixed tempo for your project.

When the tempo track is deactivated, the tempo track curve is grayed out. The fixed tempo is displayed as a horizontal line in the tempo curve display.

If you know the tempo of your music, you can adjust the tempo value in the following areas:

- **Tempo** field on the **Transport** panel
- **Current Tempo** field on the **Tempo Track Editor** toolbar
- **Current Tempo** field on the tempo track

If you do not know the tempo of your music, use one of the following tools to calculate and set it:

- Beat Calculator
- Merge Tempo From Tapping (Cubase Pro only)
- Set Project Tempo from Loop

RELATED LINKS

- [Setting the Project Tempo from a Recording](#) on page 872
- [Setting the Project Tempo by Tapping](#) on page 872
- [Setting the Project Tempo from an Audio Loop](#) on page 873

Setting the Project Tempo from a Recording

You can calculate the tempo of freely recorded audio or MIDI material with the **Beat Calculator** and set it as the project tempo.

PREREQUISITE

The tempo mode is set to **Fixed**.

PROCEDURE

1. On the **Project** window toolbar, select the **Range Selection** tool.
 2. In the event display, make a selection that covers an exact number of beats of the recording.
 3. Select **Project > Beat Calculator**.
 4. In the **Beats** value field, enter the number of beats that the selection encompasses. The calculated tempo is shown in the **BPM** field.
 5. In the **Insert Tempo into Tempo Track** section, click **At Tempo Track Start**.
-

RESULT

The project tempo is set to the tempo calculated from your recording.

RELATED LINKS

- [Beat Calculator](#) on page 873

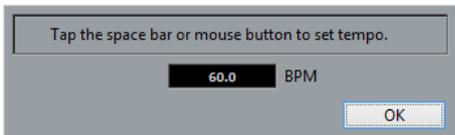
Setting the Project Tempo by Tapping

You can set the tempo of freely recorded audio or MIDI material by tapping.

PREREQUISITE

The tempo mode is set to **Fixed**.

PROCEDURE

1. Activate playback.
 2. Select **Project > Beat Calculator**.
 3. Click **Tap Tempo**.
The **Tap Tempo** window opens.
- 
4. Use **Space** to tap the tempo of the recording that is played back. In the **BPM** field, the calculated tempo is updated each time you tap.
 5. Click **OK** to close the window.
The tapped tempo is shown in the **BPM** field of the **Beat Calculator**.

6. Click one of the buttons in the **Insert Tempo into Tempo Track** section to insert the calculated tempo into the tempo track.

RESULT

The project tempo is set to the tapped tempo.

RELATED LINKS

[Setting up a Fixed Project Tempo](#) on page 871

Setting the Project Tempo from an Audio Loop

You can set the project tempo from the tempo of an audio loop.

PREREQUISITE

Your project contains an audio loop that is not in **Musical Mode**.

PROCEDURE

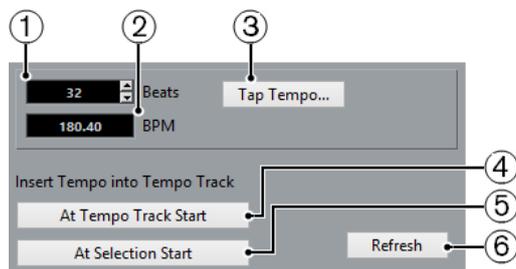
1. In the **Project** window ruler, set the left locator to the beginning of the audio loop.
2. Set the right locator to the end of the last bar.
This does not need to match with the end of the audio loop, but to its number of bars.
3. Select the audio loop.
4. Select **Audio > Advanced > Set Tempo from Event**.
You are asked if you want to set the global project tempo.
5. Perform one of the following actions:
 - Click **Yes** to adjust the project tempo globally.
 - Click **No** to adjust the project tempo only in the section of the audio event.

RESULT

The project tempo is set to the tempo calculated for the audio loop.

Beat Calculator

The **Beat Calculator** is a tool for calculating the tempo of freely recorded audio or MIDI material. It also allows you to set the tempo by tapping.



- To open the **Beat Calculator** for an audio or MIDI recording, select **Project > Beat Calculator**.
1. **Beats**
Allows you to enter the number of beats for the selected section of your recording.
 2. **BPM**
Shows the tempo calculated for the selection.

3. Tap Tempo

Opens a window where you can specify a tempo by tapping.

4. Insert Tempo into Tempo Track At Tempo Track Start

If your project is in tempo **Track** mode, the calculated tempo is set as the first tempo curve point. If your project is in fixed tempo mode, the calculated tempo is set for the entire project.

5. Insert Tempo into Tempo Track At Selection Start

If your project is in tempo track mode, the calculated tempo is set as a new tempo event at the start of the selection.

6. Refresh

Allows you to recalculate the tempo. This is useful if you adjust the selection, for example.

Tempo Detection (Cubase Pro only)

You can detect the tempo of any rhythmic musical content, even if it has not been recorded to a metronome click or if it contains tempo drift.

Detecting the tempo of musical material is useful for the following cases:

- If you want your audio or MIDI tracks to follow the tempo of freely recorded material.
- If you want to adjust freely recorded material to the project tempo.

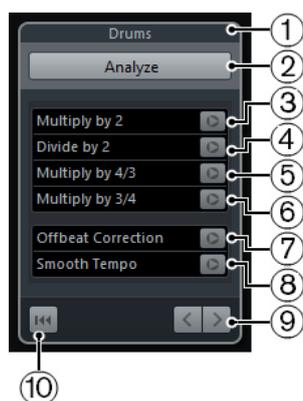
To perform a tempo detection, the following requirements must be met:

- The audio event or MIDI part must be at least 7 seconds long.
- The material must have discernible beats or rhythms.

Tempo Detection Panel

The **Tempo Detection Panel** allows you to analyze the tempo of audio events or MIDI parts.

- To open the **Tempo Detection Panel** for an audio event or a MIDI part, select the event or the part and select **Project > Tempo Detection**.



1. Name

Shows the name of the selected event or part.

2. Analyze

Starts the tempo detection.

3. Multiply by 2

Allows you to double the detected tempo. This is useful if your material is twice as fast as the detected tempo.

4. Divide by 2

Allows you to halve the detected tempo. This is useful if your material is half as fast as the detected tempo.

5. Multiply by 4/3

Allows you to adjust the detected tempo with a factor of 4/3. This is useful if your material contains dotted notes or triplets and the algorithm detects 3 beats where 4 are expected.

6. Multiply by 3/4

Allows you to adjust the detected tempo with a factor of 3/4. Combined with **Multiply by 2** this is useful if the actual signature is 2/4 and the algorithm detects 6/8 beats or vice versa.

7. Offbeat Correction

Allows you to shift the detected tempo events by half a beat. This is useful for material where the offbeat is so dominant that the algorithm mistakes it for an upbeat.

8. Smooth Tempo

Allows you to retrigger the tempo analysis and removes irregular spikes or tempo changes for material that has a steady tempo. This is useful if irregular tempo changes were detected, even though you know that the material has a more or less steady tempo.

9. Direction of reanalysis

When you correct the detected tempo curve by reanalyzing it manually, these buttons allow you to change the direction in which the material is analyzed. To reanalyze the beginning of the tempo curve, activate the left arrow button.

10. Reset

Resets the analysis data.

Exporting a Tempo Track (Cubase Pro only)

You can export a tempo track as an XML file to use it in other projects.

PROCEDURE

1. Select **File > Export > Tempo Track**.
2. In the file dialog that opens, specify a name and a location for the file.
3. Click **Save**.

RESULT

The tempo track information is saved together with signature events with the file extension `.smt`.

Importing a Tempo Track (Cubase Pro only)

You can import a tempo track from another project.

PROCEDURE

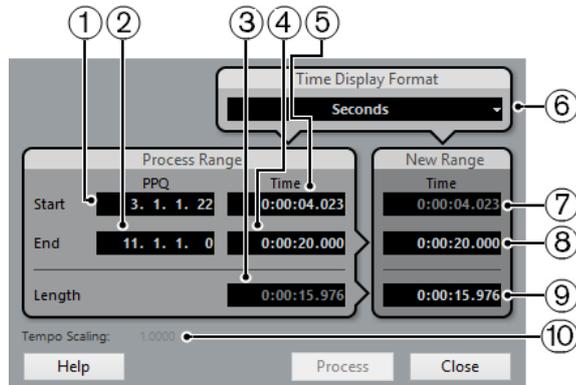
1. Select **File > Import > Tempo Track**.
2. In the file dialog that appears, navigate to the file you want to import.
3. Click **Open**.

RESULT

The tempo track is imported to your project together with signature events. All tempo track data in the project is replaced.

Process Tempo (Cubase Pro only)

The **Process Tempo** dialog allows you to set a range to a specific length or to adjust its end time by automatic adjustment of the tempo track.



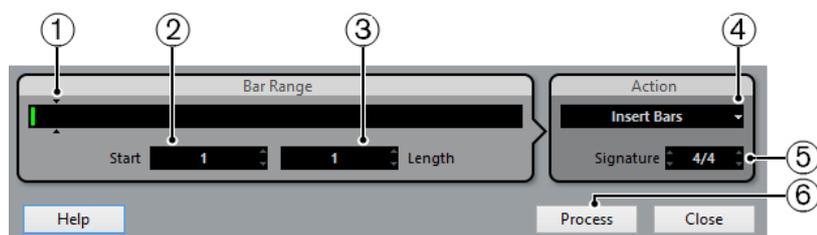
- To open the **Process Tempo** dialog, activate **Activate Tempo Track**, select **Project > Tempo Track** to open the **Tempo Track Editor**, and click **Open Process Tempo Dialog**.

The following options are available:

1. **Range Start Time in PPQ**
Shows the start time of the locator range in bars and beats.
2. **Range End Time in PPQ**
Shows the end time of the locator range in bars and beats.
3. **Range Length in Selected Time Format**
Shows the length of the locator range in bars and beats.
4. **Range End Time in Selected Time Format**
Shows the end time of the locator range in the selected time format.
5. **Range Start Time in Selected Time Format**
Shows the start time of the locator range in the selected time format.
6. **Time Display Format**
Allows you to select the time format that is displayed in the value fields of the new range.
7. **New Range Start Time in Selected Time Format**
Shows the start time of the new range in the selected time format.
8. **New Range End Time in Selected Time Format**
Shows the end time of the new range in the selected time format.
9. **New Range Length in Selected Time Format**
Shows the length of the new range in the selected time format.
10. **Tempo Scaling**
Shows the scaling value.

Process Bars (Cubase Pro only)

The **Process Bars** dialog allows you to insert, delete, replace, or reinterpret the signature events for a specified bar range by automatic adjustment of the signature and tempo events.



- To open the **Process Bars** dialog, select **Project > Tempo Track** to open the **Tempo Track Editor**, and click **Open Process Bars Dialog**.

The following options are available:

1. **Bar Range**
Shows the specified bar range.
2. **Start**
Allows you to set a start position for the bar range.
3. **Length**
Allows you to set a length for the bar range.
4. **Action**
Allows you to select one of the following actions:
 - **Insert Bars** inserts an empty **Bar Range** with the set time **Signature** at the **Start** position.
 - **Delete Bars** deletes the set **Bar Range** at the **Start** position.
 - **Reinterpret Bars** reinterprets the set **Bar Range** with the set time **Signature** at the **Start** position. However, the playback of the notes stays the same.
 - **Replace Bars** replaces the set **Bar Range** at the **Start** position.
5. **Signature**
Allows you to specify the time signature that is used for the **Insert**, **Reinterpret**, and **Replace** actions.
6. **Process**
Applies the specified action.

Time Warp (Cubase Pro only)

The **Time Warp** tool allows you to adjust musical positions of events or parts to time positions.

- You can adjust positions in musical time based material to positions in time.
- You can match material with a musical time base to material with a linear time base.

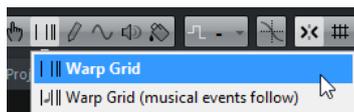
NOTE

The **Time Warp** tool can create tempo values up to 300 BPM.

If you activate **Time Warp** on the toolbar, the ruler shows tempo events as flags with tempo values.



If you click the **Time Warp** on the **Project** window toolbar, and click again, a pop-up menu opens where you can select one of the following modes:



- **Warp Grid**
If you use the **Time Warp** tool in this mode, the absolute time positions for all tracks that are set to musical time base are kept.
- **Warp Grid (musical events follow)**
If you use the **Time Warp** tool in this mode, all tracks that are set to musical time base follow the changes.

When you click with the **Time Warp** tool, it snaps to the tempo grid in the window. If you want the **Time Warp** tool to snap to a marker or the start or end of an event instead, activate **Snap** and set the **Snap Type** to **Events**.

Adjusting Musical Positions to Time Positions

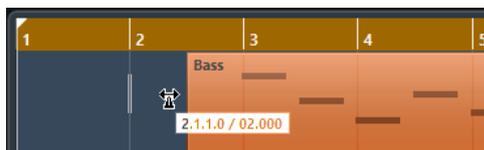
You can adjust musical positions to positions in time with the **Time Warp** tool.

PREREQUISITE

Tempo track mode is activated. **Snap** is activated and you have selected an appropriate **Snap Type**.

PROCEDURE

1. On the **Project** window toolbar, click **Time Warp**.
The ruler is automatically set to **Bars+Beats** format.
2. In the event display, locate the musical position that you want to adjust and drag the time position to match it.



This can be the event start, a certain hit within the event, etc.

3. Release the mouse button.

RESULT

The musical position is adjusted to the time position, and the tempo value of the last tempo event before the click position is changed. If later tempo events exist, a new tempo event is created at the click position.

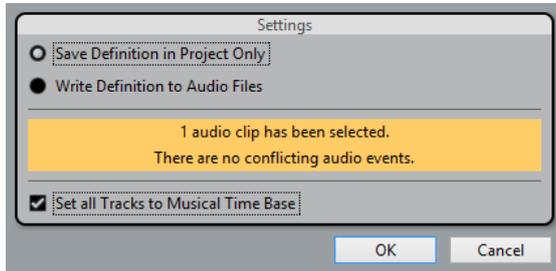
RELATED LINKS

[Project Tempo Modes](#) on page 863

[Time Warp \(Cubase Pro only\)](#) on page 877

Set Definition From Tempo

The **Set Definition From Tempo** dialog allows you to set up freely recorded audio material to follow a specific tempo.



- To open the **Set Definition From Tempo** dialog for an audio recording, select **Audio > Advanced > Set Definition From Tempo**.

Save Definition in Project Only

Allows you to save the tempo information in the project file only.

Write Definition to Audio Files

Allows you to write the tempo information to the selected audio files. This is useful if you want to use them in other projects together with the tempo information.

Set all Tracks to Musical Time Base

Allows you to set all tracks to musical time base. If this is deactivated, only the tracks with the selected events are set to musical time base.

Adjusting the Audio Tempo to the Project Tempo

You can adjust the tempo of freely recorded audio material to the project tempo.

PROCEDURE

1. Select the audio events that you want to adjust to the project tempo.
2. Select **Audio > Advanced > Set Definition From Tempo**.
3. Optional: Adjust the settings.
4. Click **OK**.

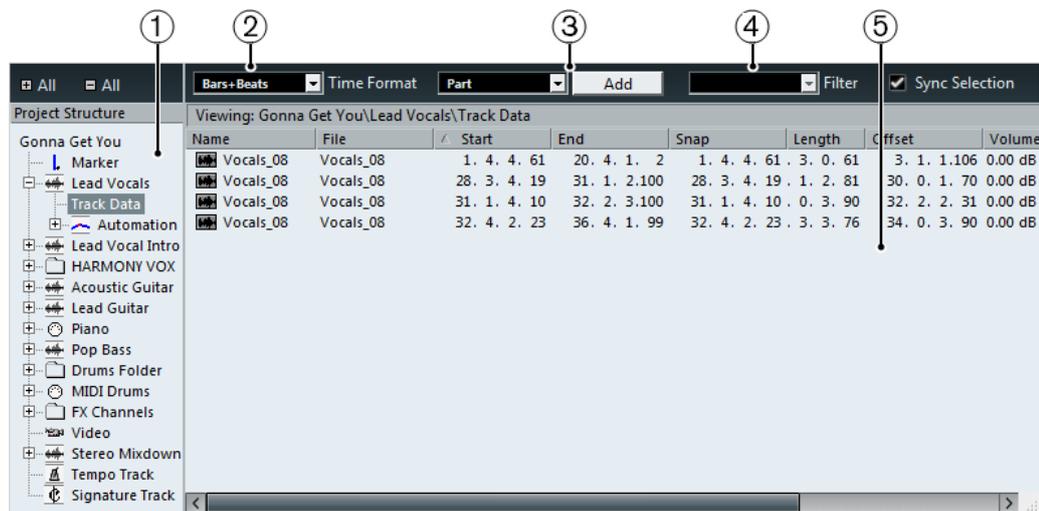
RESULT

The tempo information is copied to the audio and the tracks are set to musical time base. This is achieved by applying warping to the events. **Musical Mode** is activated for the audio events. The audio tracks now follow any tempo changes in the project.

Project Browser (Cubase Pro only)

Window Overview

The Project Browser window provides a list-based representation of the project. This allows you to view and edit all events on all tracks by using regular value editing in a list.



1. Project Structure list
2. Time Format pop-up menu
3. Add pop-up menu and Add button
4. Filter pop-up menu
5. Event display

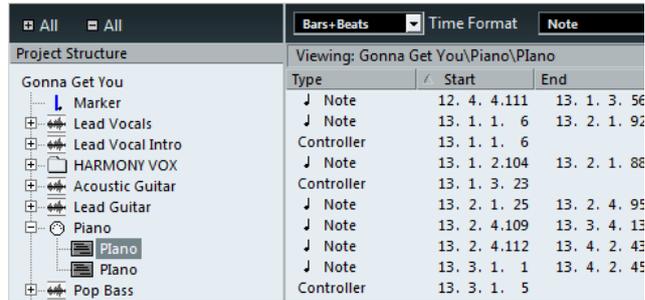
Opening the Project Browser

You open the Project Browser by selecting "Browser" from the Project menu. The Browser window can be open while you are working in other windows; any changes made in the Project window or an editor are immediately reflected in the Project Browser and vice versa.

Navigating in the Browser

You use the Project Browser much like you use the File Explorer/Mac OS Finder for browsing folders on your hard disk.

- Click on an item in the Project Structure list to select it for viewing. The contents of the item are shown in the event display.



- Items with hierarchical substructures can be folded out by clicking the “+” symbols or the “closed folder” symbols in the Project Structure list.
When the substructure of an item is revealed, a “-” symbol or an “open folder” symbol is shown instead – click this to hide the substructure.
- To reveal or hide all substructures in the Project Structure list, use the buttons “(+) All” and “(-) All” above the list.
- The actual editing is done in the event display, using regular value editing techniques.
There is one exception: You can rename items in the Project Structure list by clicking on a selected name and typing.

Customizing the view

You can drag the divider between the Project Structure list and the event display.

Furthermore, the event display can be customized in the following ways:

- You can change the order of the columns by dragging the column headings to the left or right.
- To select a display format for all position and length values, use the Time Format pop-up menu.
- You can sort events in the display by columns, by clicking the column heading.
For example, if you want to sort events by their start positions, click that column heading. An arrow appears in the column heading, indicating that events are sorted by that column. The direction of the arrow indicates whether the events are sorted in ascending or descending order. To change the direction, click the column heading again.

Importing files via the MediaBay

You can also import audio, video and MIDI files into the Project Browser via the MediaBay using drag and drop.

NOTE

You can only import into existing tracks. This means, for example, that a video track has to exist in the Project window prior to importing a video file in the Project Browser.

RELATED LINKS

[MediaBay](#) on page 530

About the Sync Selection option

If the “Sync Selection” checkbox is activated on the Project Browser toolbar, selecting an event in the Project window automatically selects it in the Project Browser, and vice versa. This makes it easy to locate events in the two windows.

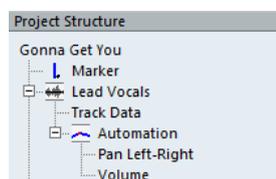
Editing tracks

Editing audio tracks

Audio tracks can have two “subitems”: Track Data and Automation.

- The Automation item corresponds to the automation track in the Project window, and contains the track’s automation events.
- The Track Data item corresponds to the actual audio track in the Project window. It contains audio events and/or audio parts, which in turn can contain audio events.

Note that if you have not performed any automation or opened an automation track, the Browser will only contain the audio data.



RELATED LINKS

[Editing automation tracks](#) on page 887

The list columns for audio events

Name

Allows you to change the name of the event. Double-clicking the waveform image to the left of it opens the event in the Sample Editor.

File

The name of the audio file referenced by the event’s audio clip.

Start

The start position of the event. If the event belongs to an audio part, you cannot move it outside the part.

End

The end position of the event.

Snap

The absolute position of the event’s snap point. Note that adjusting this value will not change the position of the snap point within the event – instead it is another way of moving the event!

Length

The length of the event.

Offset

This determines “where in the audio clip” the event starts. Adjusting this value is the same as sliding the contents of the event in the Project window.

You can only specify positive Offset values, because the event cannot start before the start of the clip. Likewise, it cannot end after the end of the clip. If the event already plays the whole clip, the Offset cannot be adjusted at all.

Volume

The volume of the event, as set with the Volume handle or on the info line in the Project window.

Fade In/Fade Out

The length of the fade-in and fade-out areas respectively. If you use these settings to add a fade (where there previously was none), a linear fade will be created. If you adjust the length of an existing fade, the previous fade shape will be maintained.

Mute

Click in this column to mute or unmute the event.

Image

Displays a waveform image of the event inside a box corresponding to the clip. The image is scaled according to the width of the column.

The list columns for audio parts

Name

The name of the part. Double-clicking on the part symbol to the left of it opens the part in the Audio Part Editor.

Start

The start position of the part. Editing this value is the same as moving the part in the Project window.

End

The end position of the part. Editing this value is the same as resizing the part in the Project window.

Length

The length of the part. Editing this value is the same as resizing the part in the Project window.

Offset

This adjusts the start position of the events within the part. Adjusting this value is the same as sliding the contents of the part in the Project window.

Setting a positive Offset value is the same as sliding the contents to the left, while a negative Offset corresponds to sliding the contents to the right.

Mute

Click in this column to mute or unmute the part.

Creating audio parts

When the “Audio” item of an audio track is selected in the Project Structure list, you can create empty audio parts on the track by clicking the Add button on the toolbar. This will insert a part between the left and right locator.

Editing MIDI tracks

Just like audio tracks, MIDI tracks can have two “subitems”: Track Data and Automation.

- The Track Data item corresponds to the actual MIDI track in the Project window and can contain MIDI parts (which in turn can contain MIDI events).
- The Automation item corresponds to the automation track in the Project window, and contains the track’s automation events.

NOTE

If you have not performed any automation or opened an automation track, the Browser will only contain the MIDI data.

When editing the Track Data, the following parameters are available:

The list columns for MIDI events

Type

The type of MIDI event. This cannot be changed.

Start

The position of the event. Editing this value is the same as moving the event.

End

This is only used for note events, allowing you to view and edit the end position of a note thereby resizing it.

Length

This is only used for note events. It shows the length of the note – changing this resizes the note and automatically changes the End value as well.

Data 1

The property of this value depends on the type of MIDI event:

- For notes, this is the note number (pitch). This is displayed and edited as a note name and an octave number, with the values ranging between C-2 and G8.
- For controller events, this is the type of controller, displayed in words. Note that you can edit this by entering a number – the corresponding controller type is automatically displayed.
- For pitchbend events, this is the fine adjustment of the bend amount.
- For poly pressure events, this is the note number (pitch).
- For VST 3 events, this is the event parameter (e. g. Volume).
- For other event types, this is the value of the event.

Data 2

The property of this value depends on the type of MIDI event:

- For notes, this is the note-on velocity.

- For controller events, this is the value of the event.
- For pitchbend events, this is the coarse bend amount.
- For poly pressure events, this is the amount of pressure.
- For VST 3 events, this is the value of the event parameter, with a range of 0.0 to 1.0.
- For other event types, this is not used.

Channel

The event's MIDI channel.

Comment

This column is used for some event types only, providing an additional comment about the event.

The list columns for MIDI parts

Name

The name of the part.

Start

The start position of the part. Editing this value is the same as moving the part.

End

The end position of the part. Changing this is the same as resizing the part (and will automatically affect the Length value as well).

Length

The length of the part. Changing this resizes the part and automatically changes the End value.

Offset

This adjusts the start position of the events within the part. Adjusting this value is the same as sliding the contents of the part in the Project window.

Setting a positive Offset value is the same as sliding the contents to the left, while a negative Offset corresponds to sliding the contents to the right.

Mute

Click in this column to mute or unmute the part.

NOTE

For SysEx (system exclusive) events, you can only edit the position (Start) in the list. However, clicking the Comment column opens the SysEx Editor, in which you can perform detailed editing of system exclusive events.

RELATED LINKS

[Editing automation tracks](#) on page 887

[SysEx Messages](#) on page 754

Editing Note Expression data in the Project Browser

In the Project Browser, you can view and edit the MIDI controller events or VST 3 events of a MIDI note with Note Expression data.

To view and edit the Note Expression data content of a MIDI note, proceed as follows:

PROCEDURE

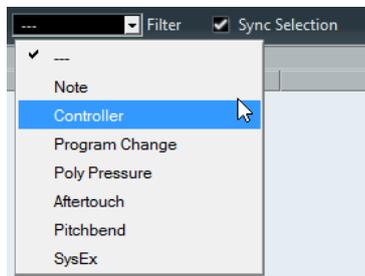
1. In the Project Structure list, select the Note Expression subitem of the MIDI note that you want to view or edit.
In the event display, all MIDI controllers or VST 3 events within the Note Expression data are listed.
 2. In the event display, view and edit the parameter values.
This allows you to move an event by entering a different Start value, for example. You can also delete single events to “thin out” the Note Expression data content by selecting them and pressing **Delete**.
-

RELATED LINKS

[Note Expression](#) on page 772

Filtering MIDI events

When you are editing MIDI in the Project Browser, the large number of different MIDI events displayed can make it hard to find the events you want to edit. The Filter pop-up menu allows you to select a single event type for display.



When this option is selected, only Controller events will be shown in the event display. To show all event types, select the top item (“---”) from the menu.

Creating MIDI parts

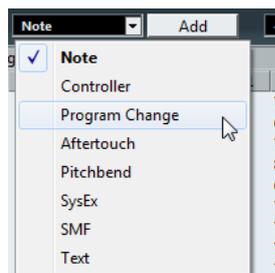
When a MIDI track is selected in the Project Structure list, you can create empty MIDI parts on the track by clicking the Add button. This will insert a part between the left and right locator.

Creating MIDI events

You can use the Project Browser to create new MIDI events.

PROCEDURE

1. Select a MIDI part in the Project Structure list.
2. Move the project cursor to the desired position for the new event.
3. Use the Add pop-up menu above the event display to select which type of MIDI event to add.



4. Click the Add button.

An event of the selected type is added to the part, at the project cursor position. If the cursor is outside the selected part, the event is added at the beginning of the part.

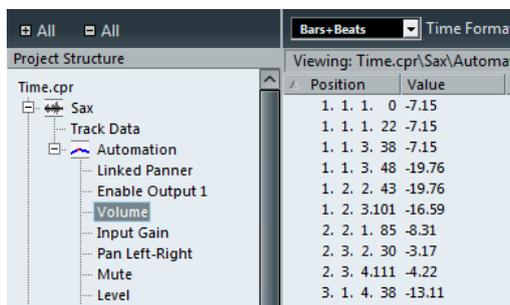
NOTE

It is not possible to add MIDI controller events or VST 3 events to Note Expression data.

Editing automation tracks

All kinds of Cubase automation (the automation tracks for MIDI, instrument, audio, group, and FX channel tracks, or the individual automation tracks for VST instruments, ReWire channels, or input (Cubase Pro only) and output busses) are handled in the same way in the Project Browser.

Each Automation item in the Project Structure list will have a number of subentries, one for each automated parameter. Selecting one of these parameters in the Project Structure list shows its automation events in the list:



You can use the two columns in the list to edit the position of the events and their values.

Editing the video track

When the video track is selected in the Project Structure list, the event display lists the video events on the track, with the following parameters:

Name

The name of the video clip that the event refers to.

Start

The start position of the event. Editing this value is the same as moving the event.

End

The end position of the event. Editing this value is the same as resizing the event, and will automatically change the Length value as well.

Length

The length of the event. Editing this value is the same as resizing the event, and will automatically change the End value as well.

Offset

This determines “where in the video clip” the event starts.

Note that the event cannot start before the start of the clip, or end after the end of the clip. Thus, if the event already plays the whole video clip, the Offset cannot be adjusted at all.

Editing marker tracks

Marker events have the following parameters:

Name

The name of the marker. This can be edited for all markers except the left and right locator.

Start

The position of “regular” markers or the start position of cycle markers.

End

The end positions of cycle markers. Editing this value is the same as resizing the cycle marker, and will automatically change the Length value as well.

Length

The length of cycle markers. Editing this value is the same as resizing the marker, and will automatically change the End value as well.

ID

The number of the marker. For regular (non-cycle) markers, this corresponds to the key commands used for navigating to the markers. For example, if a marker has ID 3, pressing **Shift-3** on the computer keyboard will move the song position to that marker. By editing these values, you can assign the most important markers to key commands.

You can insert markers on the selected marker track by selecting “Marker” or “Cycle Marker” from the Add pop-up menu and clicking the Add button. Regular markers will be added at the current project cursor position while cycle markers will be added between the current left and right locator positions.

NOTE

The Project Browser only displays the default attributes.

RELATED LINKS

[Using Markers to Select Ranges](#) on page 293

Editing the tempo track

When the tempo track is selected in the Project Structure list, the event display shows the events on the tempo track, with the following parameters:

Position

The position of the tempo event. You cannot move the first event on the tempo track.

Tempo

The tempo value of the event.

Type

This indicates whether the tempo jumps to the value of the event (“Jump” type) or whether it changes gradually from the previous tempo event, creating a ramp (“Ramp” type).

You can add new tempo events by clicking the Add button. This creates a jump-type event with the value 120 bpm at the project cursor position. Make sure that there is no other tempo event at the current cursor position.

RELATED LINKS

[Editing Tempo and Time Signature](#) on page 863

Editing time signatures

When “Signature track” is selected in the Project Structure list, the event display shows the time signature events in the project:

Position

The position of the event. Note that you cannot move the first time signature event.

Signature

The value (time signature) of the event.

You can add new time signature events by clicking the Add button. This creates a 4/4 event, at the beginning of the bar closest to the project cursor position. Make sure that there is no other time signature event at the current cursor position.

Deleting events

The procedure for deleting events is the same for all different track types:

PROCEDURE

1. Click on an event (or a part) in the Event display to select it.
2. Select Delete from the Edit menu or press **Delete** or **Backspace**.

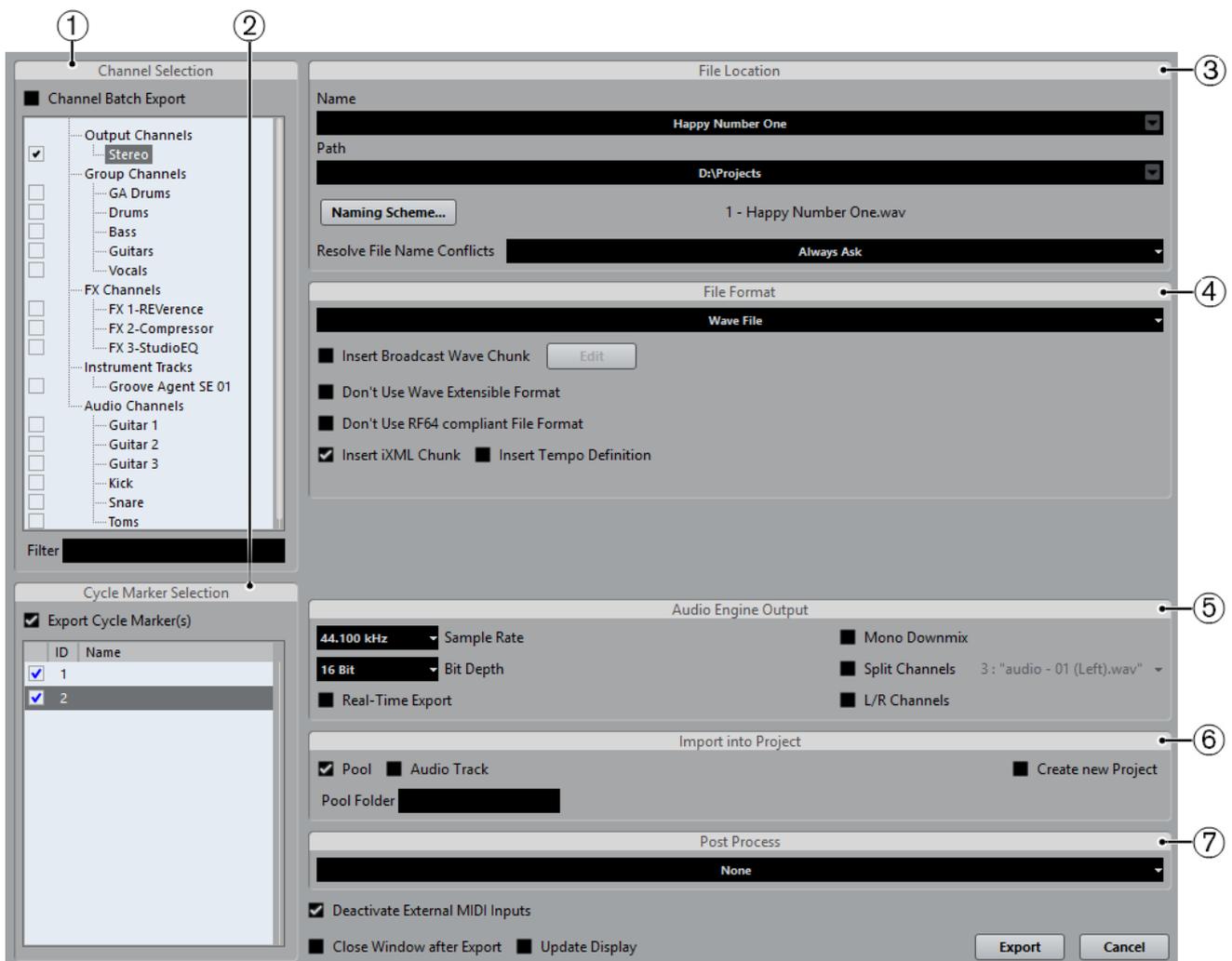
IMPORTANT

Note that you cannot delete the first tempo event or the first time signature event.

Export Audio Mixdown

The **Export Audio Mixdown** function allows you to mix down and export all audio that is contained between the left and right locators of a project. Cubase Pro only: You can also export audio that is contained in different ranges defined by cycle markers.

To open the **Export Audio Mixdown** dialog, select **File > Export > Audio Mixdown**.



The **Export Audio Mixdown** dialog is divided into several sections:

1. Channel Selection

Allows you to select the channels that are mixed down from a list of all output and audio-related channels that are available in the project.

2. Cycle Marker Selection

Cubase Pro only: Allows you to export sections of your project that are defined by cycle marker ranges of the active marker track.

3. File Location

Allows you to set up the naming scheme and to select a path for the exported file.

4. File Format

Allows you to select a file format and make additional settings for the file to be created. This includes codec settings, meta data, sample rate, bit depth, etc. The available options depend on the selected file format.

5. Audio Engine Output

Allows you to specify a sample rate, a bit depth, and the number of audio channels for the audio output.

6. Import Into Project

Allows you to automatically import the resulting audio file back into your project.

7. Post Process

Allows you to specify what happens after the export process.

RELATED LINKS

[Channel Selection](#) on page 892

[Cycle Marker Selection \(Cubase Pro only\)](#) on page 893

[File Location](#) on page 893

[File Format](#) on page 896

[Audio Engine Output](#) on page 902

[Import Into Project](#) on page 903

[Post Process](#) on page 904

Mixing Down to Audio Files

PROCEDURE

1. Set up the left and right locators to encompass the section that you want to mix down.
2. Set up your tracks so that they play back the way you want.
This includes muting unwanted tracks or parts, making manual **MixConsole** settings, and/or activating the **R** (Read) automation buttons for **MixConsole** channels.
3. Select **File > Export > Audio Mixdown**.
4. In the **Export Audio Mixdown** dialog, make your settings.
5. Click **Export**.

RESULT

The audio file is exported.

IMPORTANT

If you set the export range in such a way that the effects that are applied to a preceding event, for example reverb, reach into the next, these will be heard in the mixdown even though the event itself is not included. To avoid this, mute the first event.

Available Channels for Export

The **Channel Selection** section of the **Export Audio Mixdown** dialog contains a list of channels that you can export as an audio mixdown.

The channels are organized in a hierarchical structure. Channels of the same type are grouped. This allows you to easily identify and select the channels for export.

NOTE

MIDI tracks are not available for export. To include MIDI in a mixdown, you must record MIDI to audio tracks.

You can mix down the following channel types:

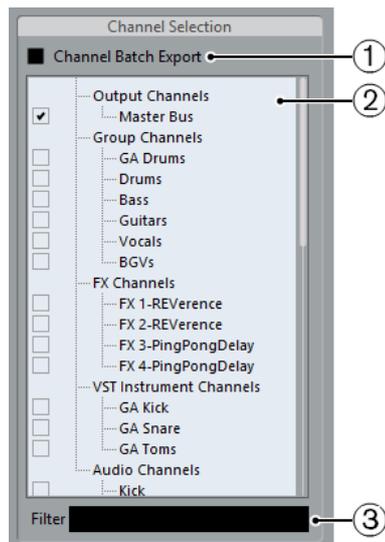
- **Output channels**
All output channels that you configured in the **VST Connections** dialog are listed in the **Channel Selection** section. By activating an output channel in the list you instruct Cubase to mix down all tracks that are routed to this output channel.
- **Audio channels**
All audio channels that are available in your project are listed in the **Channel Selection** section. By activating an audio channel in the list you instruct Cubase to mix it down to a file, including insert effects, EQ, etc.
- **Any audio-related MixConsole channels**
All VST instrument channels, instrument tracks, effect return channels (FX channel tracks), group channels, and ReWire channels of your project are listed in the **Channel Selection** section. By activating an audio-related channel in the list you instruct Cubase to mix it down, including insert effects, EQ, etc.

RELATED LINKS

[VST Connections](#) on page 24

Channel Selection

The **Channel Selection** section allows you to select the channels that are mixed down.



1. **Channel Batch Export** (Cubase Pro only)

Activate this option if you want to mix down several channels simultaneously. An individual file is created for each channel. If you activate a channel type in the list, all channels of this type are selected.

2. Channels available for export

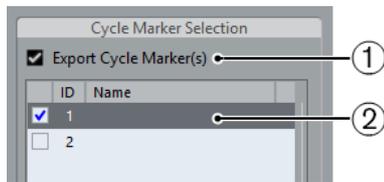
In the list, activate the channels that you want to include in the mixdown. Only the sound of the activated channels is included in the mixdown. **MixConsole** settings, record enable, and insert effects are taken into account.

3. Filter

Allows you to enter the channel name to filter the channels. This is useful if your project contains a large number of channels.

Cycle Marker Selection (Cubase Pro only)

You can export different sections of a project at the same time.



To enable this, you must define several cycle marker ranges. In the **Cycle Marker Selection** section of the **Export Audio Mixdown** dialog you can activate the cycle markers to include their ranges in the mixdown.

1. Export Cycle Marker(s)

Activate this option to select the available cycle markers in the list. This option is only available if you set up at least 1 cycle marker.

2. Cycle markers available for export

Activate the cycle markers that define the ranges that you want to include in your mixdown. On export, one audio file is created for each range.

NOTE

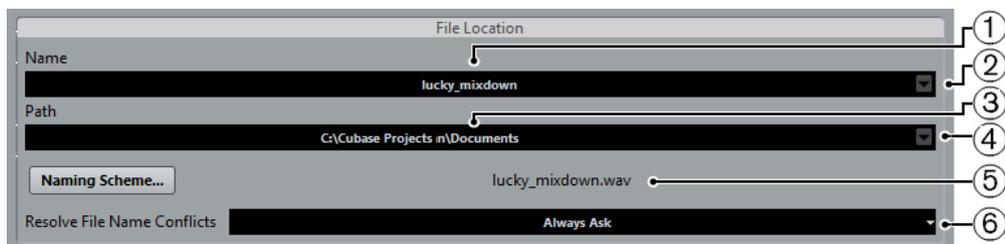
Only the cycle markers of the active marker track can be selected.

RELATED LINKS

[Markers](#) on page 285

File Location

The **File Location** section allows you to specify a name and path for the mixdown file.



1. Name

Specifies the name of the mixdown file.

2. Naming Options

Opens a pop-up menu with naming options:

- **Set To Project Name** inserts the project name into the **Name** field.
- **Auto Update Name** adds a number to the file name and increments the number every time you export a file.

3. Path

Opens a dialog that allows you to browse for a file location.

4. Path Options

Opens a pop-up menu with the following options:

- **Choose** opens a dialog that allows you to browse for a file location.
- **Use Project Audio Folder** sets the path to the **Audio** folder of your project.
- **Recent Paths** allows you to select recently selected file locations.
- **Clear Recent Paths** allows you to delete all recently selected file locations.

5. Naming Scheme

Opens a dialog where you can specify a naming scheme for the mixdown file name.

6. Resolve File Name Conflicts

Specifies how file name conflicts with existing files are resolved.

RELATED LINKS

[Naming Scheme Dialog](#) on page 894

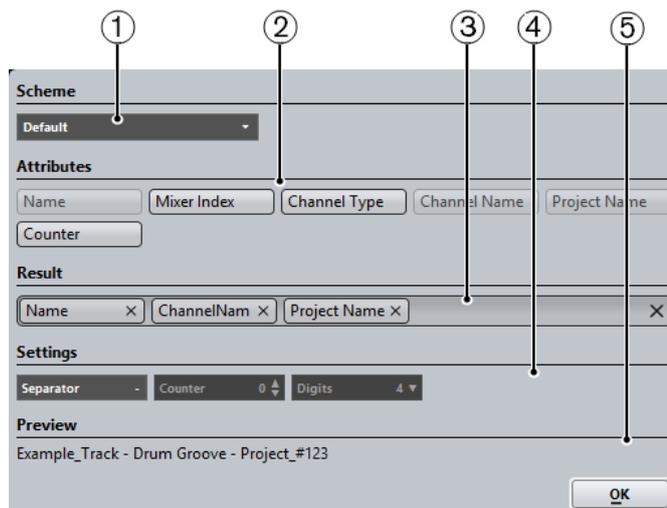
[Resolve File Name Conflicts](#) on page 895

Naming Scheme Dialog

The **Naming Scheme** dialog allows you to define naming schemes for the audio material that you want to export.

The naming attributes that are available in this dialog depend on the channel that you selected for export.

- To open the **Naming Scheme** dialog, click **Naming Scheme** in the **Export Audio Mixdown** dialog.



1. Scheme

Allows you to select, create, save, and delete naming schemes.

2. Attributes

Shows the available naming scheme attributes.

- 3. Result**
Allows you to drag and drop attributes to this field and rearrange them by dragging.
- 4. Settings**
Allows you to make separator and counter settings.
- 5. Preview**
Displays a preview of your current naming scheme.

RELATED LINKS

[Channel Selection](#) on page 892

Defining Naming Schemes

You can define a naming scheme by combining attributes that determine the structure of the file names for the exported audio files.

Depending on the settings in the **Channel Selection** section and the **Cycle Marker Selection** section (Cubase Pro only), different naming attributes are available.

PROCEDURE

1. Drag and drop up to 5 attributes into the **Result** section.
You can also double-click an attribute to add it to the **Result** section.
2. In the **Settings** section, double-click the **Separator** text field and type in a separator.
The **Preview** section displays the file name scheme according to your settings.
3. Click the up or down arrows to set the **Counter**.
The counter will start counting from this value. You can also double-click the **Counter** text field and enter a value.
4. Click the **Digits** field and select the number of digits from the pop-up menu.
The **Digits** setting determines how many digits the counters will contain.
5. Optional: Double-click the text field in the **Scheme** section and enter a preset name. Press enter to save your settings as a preset.

NOTE

The preset is only available for the channels that are selected in the **Channel Selection** section of the **Export Audio Mixdown** dialog.

Resolve File Name Conflicts

Exporting audio can result in file name conflicts with existing files that have the same name. You can define how file name conflicts are resolved.

In the **Export Audio Mixdown** dialog, select one of the following options from the **Resolve File Name Conflicts** pop-up menu:

Always Ask

Always asks if an existing file should be overwritten or if a new unique file name should be created by adding an incremental number.

Create Unique File Name

Creates a unique file name by adding an incremental number.

Always Overwrite

Always overwrites the existing file.

File Format

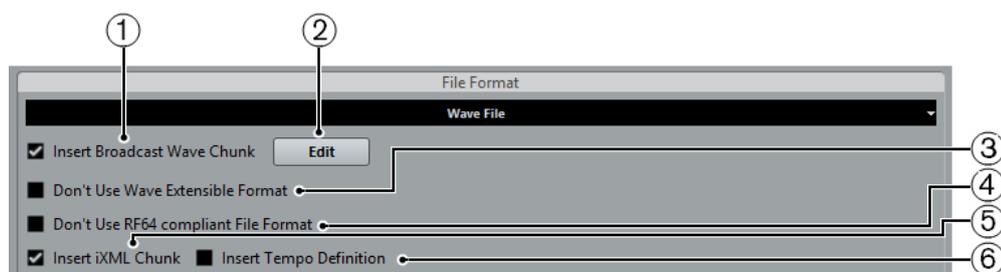
The **File Format** section allows you to select a format and make additional settings for the mixdown file.

The following file formats are available:

- **Wave File**
Wave files have the extension `.wav` and are the most common file format on the PC platform.
- **AIFC File**
AIFC stands for Audio Interchange File Format Compressed, a standard defined by Apple Inc. These files support compression ratios as high as 6:1 and contain tags in the header. AIFC files have the extension `.aifc` and are used on most computer platforms.
- **AIFF File**
AIFF stands for Audio Interchange File Format, a standard defined by Apple Inc. AIFF files have the extension `.aif` and are used on most computer platforms.
- **MPEG1 Layer 3 File**
MP3 files are highly compressed files that still provide good audio quality. The files have the extension `.mp3`.
- **Windows Media Audio File (Windows only)**
This is a format developed by Microsoft Inc. Due to the advanced audio codecs and lossless compression used, WMA files can be decreased in size with no loss of audio quality. WMA Pro features the possibility of mixing down to 5.1 surround sound. The files have the extension `.wma`.
- **FLAC File**
FLAC stands for Free Lossless Audio Codec. This is an open source format that reduces the size of audio files by 50 to 60 % compared to regular Wave files. The files have the extension `.flac`.
- **OggVorbis File**
Ogg Vorbis is an open source, patent-free audio encoding and streaming technology. The Ogg Vorbis encoder uses variable bit rate encoding. It offers compressed audio files of small size, but with comparatively high audio quality. The files have the extension `.ogg`.
- **Wave 64 File**
Wave 64 is a proprietary format developed by Sonic Foundry Inc. Wave 64 files offer the same quality as Wave files, but they can be considerably larger than standard Wave files. They are especially suited for long recordings with file sizes over 2 GB. The files have the extension `.w64`.

Wave Files

Wave files have the extension `.wav` and are the most common file format on the PC platform.



If you select the **Wave File** format for the exported file, you can make the following settings:

1. **Insert Broadcast Wave Chunk**

Activates the embedding of additional file information in Broadcast Wave format.

NOTE

By activating this option, you create a Broadcast Wave file. Some applications may not be able to handle these files. If you get problems using the file in another application, deactivate **Insert Broadcast Wave Chunk** and export the file again.

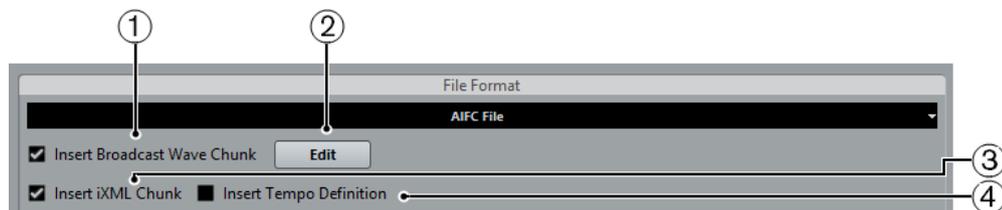
- 2. Edit**
Opens the **Broadcast Wave Chunk** dialog where you can enter information.
- 3. Don't Use Wave Extensible Format**
Deactivates the Wave Extensible format that contains additional metadata, such as the speaker configuration.
- 4. Don't Use RF64 compliant File Format**
Deactivates the RF64 compliant format that allows file sizes to exceed 4 GB.
- 5. Insert iXML Chunk**
Includes additional project-related metadata, such as project name, author, and project frame rate.
- 6. Insert Tempo Definition**
This option is only available if **Insert iXML Chunk** is activated. It allows you to include tempo information from the tempo track or from the **Definition** section of the **Sample Editor** in the iXML chunk of the exported files.

RELATED LINKS

[Attribute Inspector](#) on page 549

AIFC Files

AIFC files support compression ratios as high as 6:1 and contain tags in the header. AIFC files have the extension `.aifc` and are used on most computer platforms.



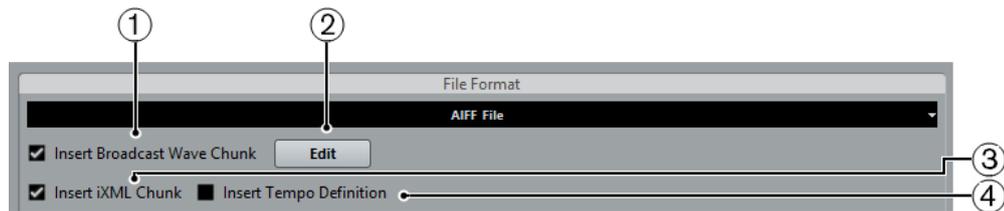
- 1. Insert Broadcast Wave Chunk**
Activates the embedding of additional file information in Broadcast Wave format.

NOTE

By activating this option, you create a Broadcast Wave file. Some applications may not be able to handle these files. If you get problems using the file in another application, deactivate **Insert Broadcast Wave Chunk** and export the file again.
- 2. Edit**
Opens the **Broadcast Wave Chunk** dialog where you can enter embedded information.
- 3. Insert iXML Chunk**
Includes additional project-related metadata, such as project name, author, and project frame rate.
- 4. Insert Tempo Definition**
This option is only available if **Insert iXML Chunk** is activated. It allows you to include tempo information from the tempo track or from the **Definition** section of the **Sample Editor** in the iXML chunk of the exported files.

AIFF Files

AIFF stands for Audio Interchange File Format, a standard defined by Apple Inc. AIFF files have the extension `.aif` and are used on most computer platforms.



1. Insert Broadcast Wave Chunk

Activates the embedding of additional file information.

NOTE

By activating this option, you create a Broadcast Wave file. Some applications may not be able to handle these files. If you get problems using the file in another application, deactivate **Insert Broadcast Wave Chunk** and export the file again.

2. Edit

Opens the **Broadcast Wave Chunk** dialog where you can enter embedded information.

3. Insert iXML Chunk

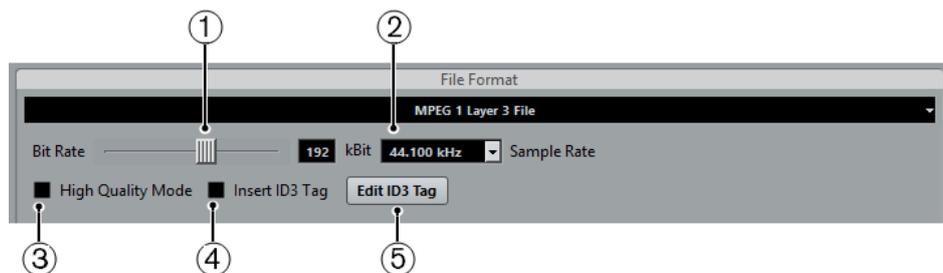
Includes additional project-related metadata, such as project name, author, and project frame rate.

4. Insert Tempo Definition

This option is only available if **Insert iXML Chunk** is activated. It allows you to include tempo information from the tempo track or from the **Definition** section of the **Sample Editor** in the iXML chunk of the exported files.

MP3 (MPEG 1 Layer 3) files

MP3 files are highly compressed files that still provide good audio quality. They have the extension `.mp3`.



1. Bit Rate

Sets the bit rate for the MP3 file. The higher the bit rate, the better the audio quality and the larger the file. For stereo audio, 128 kBit/s is considered to be providing good audio quality results.

2. Sample Rate

Sets the Sample Rate for the MP3 file.

3. High Quality Mode

Sets the encoder to a different resampling mode. This may give better results depending on your settings. However, it does not allow you to select the **Sample Rate**.

4. Insert ID3 Tag

Includes ID3 Tag information in the exported file.

5. Edit ID3 Tag

Opens the **ID3 Tag** dialog that allows you to enter information about the file. This information is embedded in the file and can be displayed by most MP3 playback applications.

Windows Media Audio Files (Windows only)

The Windows Media Audio format by Microsoft Inc. uses advanced audio codecs and lossless compression. WMA files can be decreased in size with no loss of audio quality. Furthermore, WMA features the possibility of mixing down to 5.1 surround sound. The files have the extension .wma.

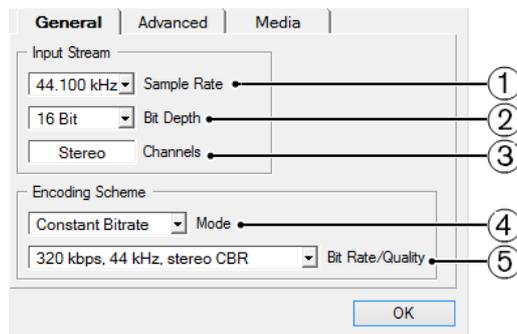


- **Codec Settings**

Allows you to open the **Windows Media Audio File Settings** dialog.

Windows Media Audio File Settings - General

The **General** tab in the **Windows Media Audio File Settings** dialog allows you to specify sample rate, bit rate, and channels for the encoded file.



1. Sample Rate

Allows you to set the sample rate to 44.100, 48000, or 96000 kHz. Set this to match the sample rate of the source material or use the closest available value that is higher than the actual value.

2. Bit Depth

Allows you to set the bit depth to 16 bit or 24 bit. Set this parameter to match the sample rate of the source material or use the closest available value that is higher than the actual value.

NOTE

Always keep in mind the intended use of the file. For internet, you might not want too high bit rates, for example.

3. Channels

This setting depends on the chosen output. You cannot change it manually.

4. Mode

- Select **Constant Bitrate** if you want to limit the file size. To calculate the size of a file that is encoded with a constant bit rate, multiply the bit rate by the duration of the file.

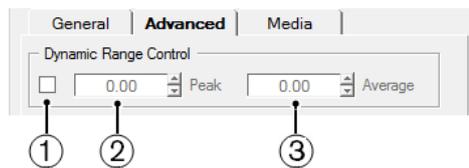
- Select **Variable Bitrate** if you want the bit rate to fluctuate depending on the character and intricacy of the material being encoded. The more complex passages in the source material, the higher the bit rate – and the larger the final file.
- Select **Lossless** to encode the file with lossless compression.

5. Bit Rate/Quality

- Allows you to set the bit rate settings depending on the selected mode and/or output channels. The higher the bitrate or quality you select, the larger the final file.

Windows Media Audio File Settings - Advanced

The **Advanced** tab in the **Windows Media Audio File Settings** dialog allows you to specify the dynamic range control, that is, the difference in dB between the average loudness and the peak audio level (the loudest sounds) of the audio for the encoded file.



1. Dynamic Range Control

The dynamic range is automatically calculated during the encoding process. If you activate this option, you can specify the dynamic range manually.

If **Dynamic Range control** is activated and the Quiet Mode of the Windows Media Player is set to Medium Difference, the peak level is limited to the peak value that you specified.

If **Dynamic Range control** is deactivated, the peak level is limited to 12 dB above the average level during playback.

If **Dynamic Range control** is activated and the Quiet Mode of the Windows Media Player is set to Little Difference, the peak level will be limited to the average value between the peak and average values that you specified. If **Dynamic Range control** is deactivated, the peak level is limited to 6 dB above the average level during playback.

2. Peak

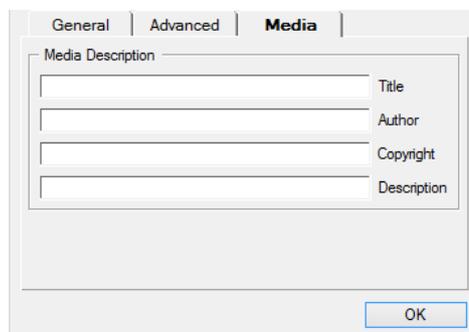
Allows you to set a peak value between 0 and -90 dB.

3. Average

Allows you to set a peak value between 0 and -90 dB. However, this affects the overall volume level and can have a negative effect on the audio quality.

Windows Media Audio File Settings - Media

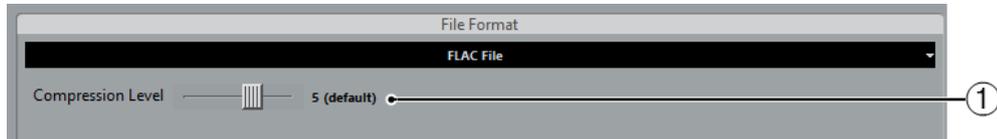
The **Media** tab in the **Windows Media Audio File Settings** dialog allows you to enter information about the file.



Use the **Title**, **Author**, **Copyright**, and **Description** fields to enter a file description of its content that is embedded in the file header. This can be displayed by some Windows Media Audio playback applications.

Flac Files

Free Lossless Audio Codec files are audio files that are typically 50 to 60 % smaller than regular Wave files.

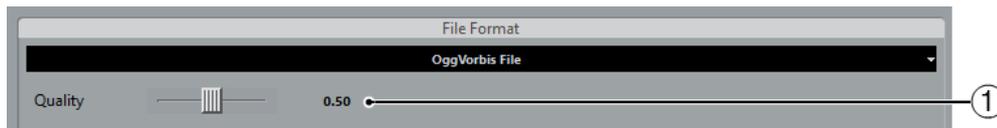


1. Compression Level

Sets the compression level for the FLAC file. Since FLAC is a lossless format, the level has more influence on the encoding speed than on the file size.

Ogg Vorbis Files

Ogg Vorbis is an open source, patent-free audio encoding and streaming technology, offering compressed audio files of small size, but with comparatively high audio quality. Ogg Vorbis files have the extension `.ogg`.

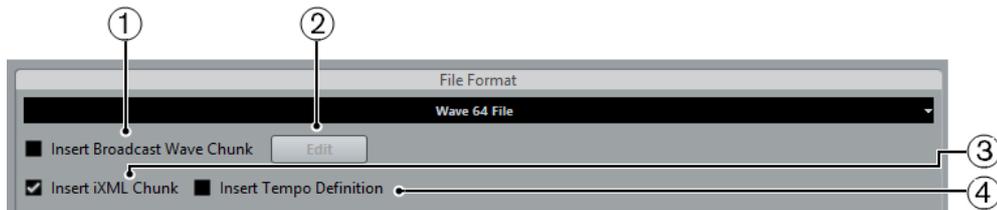


1. Quality

Sets the quality for the variable bit rate encoding. This setting determines between which limits the bit rate will vary. The higher the value, the higher the sound quality but also the larger the files become.

Wave 64 Files

Wave 64 is a proprietary format developed by Sonic Foundry Inc. Wave 64 files have the extension `.w64`.



NOTE

In terms of audio quality, Wave 64 files are identical to standard Wave files, but in the file headers Wave 64 files use 64-bit values for addressing where Wave files use 32-bit values. The consequence of this is that Wave 64 files can be considerably larger than standard Wave files. Wave 64 is therefore a good file format choice for long recordings, for example, if the file sizes exceeds 2 GB.

1. Insert Broadcast Wave Chunk

Activates the embedding of additional file information in Broadcast Wave Format.

NOTE

Activating this option creates a Broadcast Wave file. Some applications may not be able to handle Broadcast Wave files. If you get problems using the file in another application, deactivate **Insert Broadcast Wave Chunk** and export the file again.

2. Edit

Opens the **Broadcast Wave Chunk** dialog where you can enter embedded information.

3. Insert iXML Chunk

Includes additional project-related metadata, such as project name, author, and project frame rate.

4. Insert Tempo Definition

This option is only available if **Insert iXML Chunk** is activated. Includes tempo information from the tempo track or from the **Definition** section of the **Sample Editor** in the iXML chunk of the exported files.

Audio Engine Output

The **Audio Engine Output** section contains all the settings related to the output of the Cubase audio engine.



1. Sample Rate

NOTE

This parameter is only available for uncompressed audio file formats and FLAC files.

Allows you to select the frequency range of the exported audio. If you set the value lower than the project sample rate, the audio quality degrades and the high frequency content is reduced. If you set the value higher than the project sample rate, the file size increases without increasing the audio quality. For CD burning select 44.100 kHz, since this is the sample rate used on audio CDs.

2. Bit Depth

NOTE

This parameter is only available for uncompressed audio file formats and FLAC files.

Allows you to select 8, 16, 24 bit or 32 bit (float) files. If you plan to re-import the mixdown file into Cubase, select 32 bit (float). This is the resolution used for audio processing in Cubase. 32 bit (float) files are twice the size of 16 bit files. For CD burning, use the 16 bit option, as CD audio is always 16 bit. In this case, we recommend dithering. Activating the UV-22HR dithering plug-in reduces the effects of quantization noise and artifacts when converting the audio to 16 bit. 8 bit resolution results in limited audio quality and should only be used if required.

3. Real-Time Export

Allows you to export the mixdown file in realtime. This takes at least the same time as regular playback. Some VST plug-ins, external instruments, and effects require real-time export in order to have enough time to update correctly during the mixdown. Consult the plug-in manufacturers for further information.

Cubase Pro only: During the real-time export of a single channel, the **Audition Volume** fader is displayed in the progress dialog. It allows you to adjust the **Control Room** volume.

NOTE

If the CPU and disk speed of your computer do not allow to export all channels simultaneously in real-time, the program stops the process, reduces the number of channels, and starts again. Afterwards, the next batch of files is exported. This is repeated as often as needed to export all selected channels.

4. Mono Downmix

In Cubase Artist, this option allows you to downmix the 2 channels of a stereo bus to a single mono file. In Cubase Pro, this option allows you to downmix all the subchannels of a stereo or surround channel or bus to a single mono file.

For stereo, the panning law as defined in the **Project Setup** dialog is applied to avoid clipping. For surround (Cubase Pro only), the channels are summed and divided through the number of channels used (in case of a 5.1. channel = (L+R+C+LFE+Ls+Rs)/6).

5. Split Channels

Allows you to export the 2 channels of a stereo bus or all subchannels of a multi-channel bus (Cubase Pro only) as separate mono files.

6. L/R Channels

Allows you to export only the left and right subchannels of a multi-channel bus into a stereo file (Cubase Pro only).

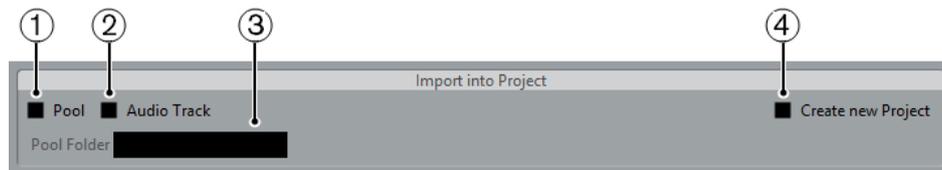
RELATED LINKS

[Dither Effects](#) on page 388

[Control Room \(Cubase Pro only\)](#) on page 352

Import Into Project

This section offers several options for importing the resulting mixdown files back into the existing or into a new project.



NOTE

When you play back the reimported file in the same project, mute the original tracks so that you only hear the mixdown.

1. Pool

Imports the resulting audio file automatically back into the **Pool** as a clip. Deactivating this option also deactivates the **Audio Track** option.

2. Audio Track

Creates an audio event that plays the clip on a new audio track, starting at the left locator. Activating this option also activates the **Pool** option.

3. Pool Folder

Allows you to specify a **Pool** folder for the clip.

4. Create New Project

NOTE

This option is only available for uncompressed file formats for which the **Use Project Audio Folder** option in the **File Location** section is deactivated.

Activate this option to create a new project that contains an audio track for each of the exported channels, as well as the signature and tempo track of the original project.

The tracks will have the corresponding mixdown file as audio event. The track names will be identical with the export channel names. Note that the new project will be the active project.

Activating this option disables the **Pool** and **Audio Track** options.

NOTE

If you activate any of the options in this section, the **Import Options** dialog opens for each exported channel when the export is complete.

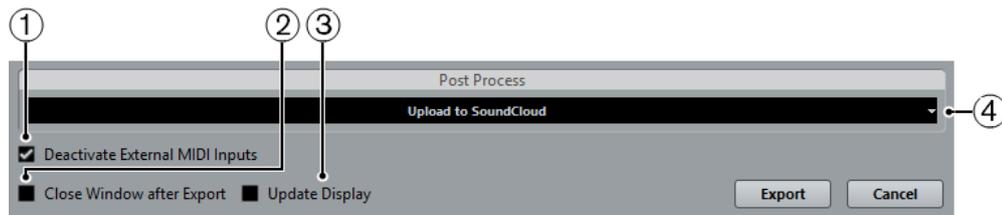
RELATED LINKS

[Importing Media](#) on page 522

[File Location](#) on page 893

Post Process

In this section you can select a process that you want to run after mixing down your audio file.



1. Deactivate External MIDI Inputs

Activate this option if MIDI inputs that are performed on external devices should be ignored during the export process.

2. Close Window after Export

Closes the dialog automatically after export.

3. Update Display

Activate this option if you want the meters to be updated during the export process. This allows you to check for clipping, for example.

4. Post Process

If WaveLab 7.0.1 or higher is installed on your computer, you can select **Open in WaveLab** to open your mixdown file in this application after export.

Select **Upload to SoundCloud** to launch SoundCloud, connect to your user account, and upload your mixdown.

Synchronization

Background

What is synchronization?

Synchronization is the process of getting 2 or more devices to play back together at the same exact speed and position. These devices can range from audio and video tape machines to digital audio workstations, MIDI sequencers, synchronization controllers, and digital video devices.

Synchronization basics

There are 3 basic components of audio/visual synchronization: position, speed, and phase. If these parameters are known for a particular device (the master), then a second device (the slave) can have its speed and position "resolved" to the first in order to have the 2 devices play in perfect sync with one another.

Position

The position of a device is represented by either samples (audio word clock), video frames (timecode), or musical bars and beats (MIDI clock).

Speed

The speed of a device is measured either by the frame rate of the timecode, the sample rate (audio word clock) or by the tempo of the MIDI clock (bars and beats).

Phase

Phase is the alignment of the position and speed components to each other. In other words, each pulse of the speed component should be aligned with each measurement of the position for the most accuracy. Each frame of timecode should be perfectly lined up with the correct sample of audio. Put simply, phase is the very precise position of a synchronized device relative to the master (sample accuracy).

Machine control

When 2 or more devices are synchronized, the question remains: how do we control the entire system? We need to be able to locate to any position, play, record, and even jog and scrub the entire system using one set of controls.

Machine control is an integral part of any synchronization setup. In many cases, the device simply called "the master" will control the whole system. However, the term "master" can also refer to the device that is generating the position and speed references. Care must be taken to differentiate between the 2.

Master and slave

Calling one device the "master" and another the "slave" can lead to a great deal of confusion. The timecode relationship and the machine control relationship must be differentiated in this regard.

In this document, the following terms are used:

- The “timecode master” is the device generating position information or timecode.
- The “timecode slave” is any device receiving the timecode and synchronizing or “locking” to it.
- The “machine control master” is the device that issues transport commands to the system.
- The “machine control slave” is the device receiving those commands and responding to them.

For example, Cubase could be the machine control master, sending transport commands to an external device which in turn sends timecode and audio clock information back to Cubase. In that case, Cubase would also be the timecode slave at the same time. So calling Cubase simply the master is misleading.

NOTE

In most scenarios, the machine control slave is also the timecode master. Once it receives a play command, that device starts generating timecode for all the timecode slaves to synchronize to.

Timecode (positional references)

The position of any device is most often described using timecode. Timecode represents time using hours, minutes, seconds, and frames to provide a location for each device. Each frame represents a visual film or video frame.

Timecode can be communicated in several ways:

- LTC (Longitudinal Timecode) is an analog signal that can be recorded on tape. It should be used for positional information primarily. It can also be used for speed and phase information as a last resort if no other clock source is available.
- VITC (Vertical Interval Timecode) is contained within a composite video signal. It is recorded onto video tape and is physically tied to each video frame.
- MTC (MIDI Timecode) is identical to LTC except that it is a digital signal transmitted via MIDI.

Timecode standards

Timecode has several standards. The subject of the various timecode formats can be very confusing due to the use and misuse of the shorthand names for specific timecode standards and frame rates. The reasons for this confusion are described in detail below. The timecode format can be divided into 2 variables: frame count and frame rate.

Frame count (frames per second)

The frame count of timecode defines the standard with which it is labeled. There are 4 timecode standards:

24 fps Film (F)

This frame count is the traditional count for film. It is also used for HD video formats and commonly referred to as “24 p”. However, with HD video, the actual frame rate or speed of the video sync reference is slower, 23.976 frames per second, so timecode does not reflect the actual realtime on the clock for 24p HD video.

25 fps PAL (P)

This is the broadcast video standard frame count for European (and other PAL countries) television broadcast.

30 fps non-drop SMPTE (N)

This is the frame count of NTSC broadcast video. However, the actual frame rate or speed of the video format runs at 29.97 fps. This timecode clock does not run in realtime. It is slightly slower by 0.1 %.

30 fps drop-frame SMPTE (D)

The 30 fps drop-frame count is an adaptation that allows a timecode display running at 29.97 fps to actually show the clock-on-the-wall-time of the timeline by “dropping” or skipping specific frame numbers in order to “catch the clock up” to realtime.

Confused? Just remember to keep the timecode standard (or frame count) and frame rate (or speed) separate.

Frame rate (speed)

Regardless of the frame counting system, the actual speed at which frames of video go by in realtime is the true frame rate.

In Cubase the following frame rates are available:

23.9 fps (Cubase Pro only)

This frame rate is used for film that is being transferred to NTSC video and must be slowed down for a 2-3 pull-down telecine transfer. It is also used for the type of HD video referred to as “24 p”.

24 fps

This is the true speed of standard film cameras.

24.9 fps (Cubase Pro only)

This frame rate is commonly used to facilitate transfers between PAL and NTSC video and film sources. It is mostly used to correct for some error.

25 fps

This is the frame rate of PAL video.

29.97 fps

This is the frame rate of NTSC video. The count can be either non-drop or drop-frame.

30 fps

This frame rate is not a video standard anymore but has been commonly used in music recording. Many years ago it was the black and white NTSC broadcast standard. It is equal to NTSC video being pulled up to film speed after a 2-3 telecine transfer.

59.98 fps (Cubase Pro only)

This rate is also referred to as “60 p”. Many professional HD cameras record at 59.98 fps. While 60 fps could theoretically exist as a frame rate, no current HD video camera records at a full 60 fps as a standard rate.

Frame count vs. frame rate

Part of the confusion in timecode stems from the use of “frames per second” in both the timecode standard and the actual frame rate. When used to describe a timecode standard, frames per second defines how many frames of timecode are counted before one second on the counter increments. When describing frame rates, frames per second define how many frames are played back during the span of one second of realtime. In other words: Regardless of how

many frames of video there are per second of timecode (frame count), those frames can be moving at different rates depending on the speed (frame rate) of the video format. For example, NTSC timecode (SMPTE) has a frame count of 30 fps. However, NTSC video runs at a rate of 29.97 fps. So the NTSC timecode standard known as SMPTE is a 30 fps standard that runs at 29.97 realtime.

Clock sources (speed references)

Once the position is established, the next essential factor for synchronization is the playback speed. Once 2 devices start playing from the same position, they must run at exactly the same speed in order to remain in sync. Therefore, a single speed reference must be used and all devices in the system must follow that reference. With digital audio, the speed is determined by the audio clock rate. With video, the speed is determined by the video sync signal.

Audio clock

Audio clock signals run at the speed of the sample rate used by a digital audio device and are transmitted in several ways:

Word clock

Word clock is a dedicated signal running at the current sample rate that is fed over BNC coaxial cables between devices. It is the most reliable form of audio clock and is relatively easy to connect and use.

AES/SPDIF Digital Audio

An audio clock source is embedded within AES and SPDIF digital audio signals. This clock source can be used as a speed reference. Preferably, the signal itself does not contain any actual audio (digital black), but any digital audio source can be used if necessary.

ADAT Lightpipe

ADAT Lightpipe, the 8-channel digital audio protocol developed by Alesis, also contains audio clock and can be used as a speed reference. It is transmitted via optical cables between devices.

NOTE

Do not confuse the audio clock embedded in the Lightpipe protocol with ADAT Sync, which has timecode and machine control running over a proprietary DIN plug connection.

MIDI clock

MIDI clock is a signal that uses position and timing data based on musical bars and beats to determine location and speed (tempo). It can perform the same function as a positional reference and a speed reference for other MIDI devices. Cubase supports sending MIDI clock to external devices but cannot slave to incoming MIDI clock.

IMPORTANT

MIDI clock cannot be used to synchronize digital audio. It is only used for MIDI devices to play in musical sync with one another. Cubase does not support being a MIDI clock slave.

The Project Synchronization Setup dialog

Cubase's Project Synchronization Setup dialog provides a central place to configure a complex synchronized system. In addition to settings for timecode sources and machine control settings, project setup parameters are available along with basic transport controls for testing the system.

- To open the **Project Synchronization Setup** dialog, select **Transport > Project Synchronization Setup**.

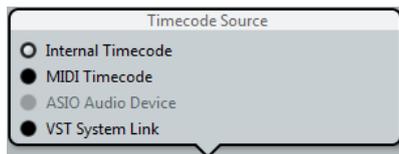
The dialog is organized into sections separating related groups of settings. The arrows shown between the various sections of the dialog indicate how settings in one section influence settings in another section. In the following, the available sections are described in detail.

The Cubase Section

At the center of the Project Synchronization Setup dialog is the Cubase section. It is provided to help you visualize the role that Cubase takes in your setup. It shows which external signals enter or leave the application.

Timecode Source

The Timecode Source setting determines whether Cubase is acting as timecode master or slave.



When set to "Internal Timecode", Cubase is the timecode master, generating all position references for any other device in the system. The other options are for external timecode sources. Selecting any of these, makes Cubase a timecode slave if "Use External Synchronization" is activated in the Transport menu.

Internal Timecode

Cubase generates timecode based on the project timeline and project setup settings. The timecode will follow the format specified in the Project Setup section.

MIDI Timecode

Cubase acts as a timecode slave to any incoming MIDI timecode (MTC) on the port(s) selected in the MIDI Timecode section, to the right of the Timecode Source section.



Selecting "All MIDI Inputs" allows Cubase to sync to MTC from any MIDI connection. You can also select a single MIDI port for receiving MTC.

ASIO Audio Device

This option is only available with audio cards that support ASIO Positioning Protocol. These audio cards have an integrated LTC reader or ADAT sync port and can perform a phase alignment of timecode and audio clock.

VST System Link

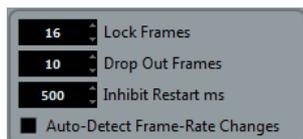
VST System Link can provide all aspects of sample-accurate synchronization between other System Link workstations.

RELATED LINKS

[Working with VST System Link](#) on page 915

Timecode Preferences

When MIDI Timecode is selected, additional options become available in the Cubase section, providing several options for working with external timecode.



Lock Frames

This setting determines how many full frames of timecode it takes for Cubase to try and establish sync or “lock”. If you have an external tape transport with a very short start-up time, try lowering this number to make lock-up even faster. This option can only be set to multiples of 2.

Drop Out Frames

This setting determines the amount of missed timecode frames it takes for Cubase to stop. Using LTC recorded on an analog tape machine can result in some amount of drop outs. Increasing this number allows Cubase to “free-wheel” over missed frames without stopping. Lowering this number causes Cubase to stop sooner once the tape machine has stopped.

Inhibit Restart ms

Some synchronizers still transmit MTC for a short period after an external tape machine has been stopped. These extra frames of timecode sometimes cause Cubase to restart suddenly. The “Inhibit Restart ms” setting allows you to control the amount of time in milliseconds that Cubase will wait to restart (ignoring incoming MTC) once it has stopped.

Auto-Detect Frame-Rate Changes

Cubase can notify the user when the frame rate of timecode changes at any point. This is helpful in diagnosing problems with timecode and external devices. This notification will interrupt playback or recording. Deactivating this option will avoid any interruption in playback or recording.

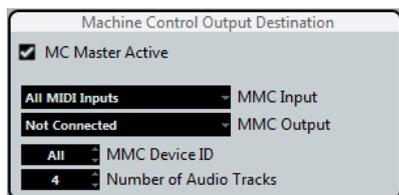
IMPORTANT

If there is a discrepancy between the project frame rate in Cubase and incoming timecode, Cubase might still be able to lock to the incoming timecode. If the user is unaware of these differences, problems can arise later in postproduction.

Machine Control Output Destination

If **Use External Synchronization** in the **Transport** menu is activated, all transport commands (including movements of the cursor in the **Project** window) are translated into machine control

commands and routed according to the settings that are made in the **Machine Control Output Destination** section.



MC Master Active

If this option is activated, transport commands are routed or sent to any device while sync is enabled. Additional routing options become available, see below. Deactivating this option does not affect the operation of the individual MMC Device panels. They can still function regardless of the machine control destination.

MMC Input and Output

The MMC Input and MMC Output settings determine which MIDI port in your system will send and receive MMC commands. Set both the input and output to MIDI ports that are connected to the desired MIDI device.

MMC Device ID

The MMC device ID should be set to the same number as the receiving device. You can also set the device ID to "All" if more than one machine is receiving MMC commands or if the device ID is not known.

NOTE

Some devices can only listen to their specific IDs. Therefore, using the All option will not work with such devices.

Number of Audio Tracks (Cubase Pro only)

The number of audio tracks should be set to match the amount of available audio tracks in the destination device. This setting determines how many record-enable buttons are shown in the MMC Master panel (see below).

MMC Master panel



The MMC Master panel can be opened from the Devices menu. In order to use the MMC Master panel, proceed as follows:

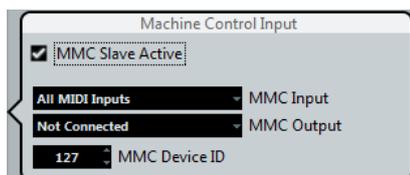
- Open the Preferences dialog, select the MIDI Filter section and make sure SysEx is activated in the Thru section.
This is necessary since MMC uses 2-way communication (the tape recorder "replies" to the MMC messages it receives from Cubase). By filtering out SysEx Thru, you ensure that these MMC System Exclusive replies are not echoed back to the tape recorder.
- On the MMC Master panel, activate the Online button to use the transport buttons on the panel to control the transport of the device.
It is not necessary to have this activated in order to synchronize with the MMC device. It only affects operation of the MMC Master panel.
- You can use the buttons to the left on the MMC Master panel to arm tape tracks for recording.

- The “A1, A2, TC, VD” items refer to additional tracks usually found on video tape recorders.
Refer to the manual of your VTR device to see if these tracks are supported.

Machine Control Input (Cubase Pro only)

Cubase can respond to machine control commands from external MIDI devices.

Cubase can follow incoming transport commands (locate, play, record) and respond to record-enabling commands for audio tracks. This allows Cubase to easily integrate into larger studio systems with centralized machine control and synchronization such as theatrical mixing stages.



MMC Slave Active

If this option is activated, several settings become available in the Machine Control Input section:

Option	Description
MMC Input	Set this to the MIDI input that is connected to the master machine control device.
MMC Output	Set this to the MIDI output that is connected to the master machine control device.
MMC Device ID	This determines the MIDI ID number that is used to identify the machine in Cubase.

IMPORTANT

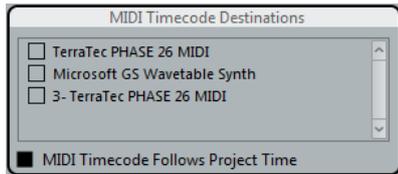
The MMC protocol involves polling devices (requesting information) for their status which requires 2-way communication. While some functions may work with only one way communication, it is best to connect both MIDI ports (input and output) of MMC devices.

MIDI Timecode Destinations

Cubase can send MTC to any MIDI port. Use this section to specify the MIDI ports to which MTC is routed. Devices that can lock to MTC will chase Cubase's timecode position.

NOTE

Some MIDI interfaces send MTC over all ports by default. If this is the case, only select one port of the interface for MTC.

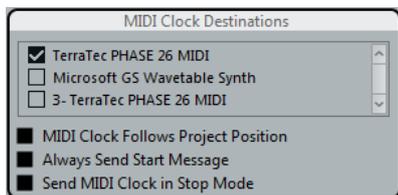


MIDI Timecode Follows Project Time

Activate this option to ensure that the MTC output follows Cubase's time position at all times including looping, locating, or jumping while playing. If not, MTC will continue on without changing locations at a loop or jump point until playback stops.

MIDI Clock Destinations

Some MIDI devices like drum machines can match their tempo and location to incoming MIDI clock. Select any MIDI ports that you want to output MIDI clock.



MIDI Clock Follows Project Position

Activate this option to ensure that the MIDI clock device follows Cubase when looping, locating, or jumping while playing.

NOTE

Some older MIDI devices might not respond well to these positioning messages and could take some time synchronizing to the new location.

Always Send Start Message

MIDI clock transport commands include Start, Stop, and Continue. However, some MIDI devices do not recognize the Continue command. By activating the "Always Send Start Message" option, you can avoid this problem with specific MIDI devices.

Send MIDI Clock in Stop Mode

Activate this option if you are working with a device that needs MIDI clock to run continuously in order to operate arpeggiators and loop generators.

Synchronized operation

Once you have connected all the devices that will be synchronized, it is important to understand how Cubase operates in Sync mode.

- To enable Sync mode, activate **Use External Synchronization** on the **Transport** menu.

Sync mode

If you activate "Use External Synchronization" on the Transport menu, the following happens:

- Cubase Pro only: Transport commands are routed to the machine control destination output as specified in the Project Synchronization Setup dialog. Locate, Play, Stop, and Record commands will now be sent to an external device.

- Cubase awaits incoming timecode from the chosen timecode source defined in the Project Synchronization Setup dialog in order to play.
Cubase will detect incoming timecode, locate to its current position, and start playback in sync with the incoming timecode.

Cubase Pro only: In a typical scenario, an external tape machine (e. g. a VTR) has its timecode output connected to Cubase. Cubase is sending machine control commands to the deck. When Sync is activated and you click Play on the Transport panel, a play command is sent to the VTR. The VTR in turn starts playback, sending timecode back to Cubase. Cubase then synchronizes to that incoming timecode.

Example Scenarios (Cubase Pro only)

To better understand how synchronization options can be utilized, an example scenario is provided.

Personal music studio

In a personal music studio, the user might have the need of synchronizing with an external recording device such as a portable hard disk recorder used for live remote recordings.

In this example, MIDI will be used for timecode and machine control while the audio clock will be handled by Lightpipe digital audio connections.

- If “Use External Synchronization” is activated in the Transport menu, Cubase sends MMC commands to the hard disk recorder.
Cubase can remotely start playback of the recorder.
- The hard disk recorder is using audio clock from Cubase’s audio interface as the speed reference.
It is also possible for Cubase to use the audio clock from the recorder. The audio clock is carried over the Lightpipe digital audio connection that also carries audio signals.
- The hard disk recorder sends back MTC to Cubase.
When the recorder begins playing, MTC is sent back to Cubase which will sync to that timecode.

Sync settings for personal music studio

To synchronize the devices in this example scenario, proceed as follows:

PROCEDURE

1. Make the connections as shown in the diagram above.
In this simple example, any device that uses MTC can be substituted.
2. Open the Project Synchronization Setup dialog and select “MIDI Timecode” as the timecode source.
When recording from the hard disk recorder into Cubase, Cubase will be the machine control master and the timecode slave, locking to incoming MTC.
3. In the “Machine Control Output Destination” section, select the “MIDI Machine Control” option.
Cubase will now send MMC commands to the hard disk recorder to locate and start playback.
4. In the “Machine Control Output Settings” section, assign the MIDI input and output ports that are connected to the hard disk recorder.
Since MMC uses 2-way communication, both MIDI ports should be connected. Be sure the MIDI filter does not echo SysEx data.

5. On the Transport menu, activate “Use External Synchronization”.
This routes transport commands to the hard disk recorder via MIDI and sets Cubase as the timecode slave.
 6. On the hard disk recorder, enable MMC and MTC.
Follow the instructions on how to set up the unit to receive MMC commands and transmit MTC.
 7. In Cubase, click the Play button.
The hard disk recorder should start playback and send MTC to Cubase. Once Cubase syncs to MTC, the status on the Transport panel should read “Lock” and show the current frame rate of incoming MTC.
-

Working with VST System Link

VST System Link is a network system for digital audio that allows you to have several computers working together in one large system. Unlike conventional networks it does not require Ethernet cards, hubs, or CAT-5 cables; instead it uses the kind of digital audio hardware and cables you probably already possess in your studio.

VST System Link has been designed to be simple to set up and operate, yet give enormous flexibility and performance gains in use. It is capable of linking computers in a “ring” network (the System Link signal is passed from one machine to the next, and eventually returns to the first machine). VST System Link can send its networking signal over any type of digital audio cable, including S/PDIF, ADAT, TDIF, or AES, as long as each computer in the system is equipped with a suitable ASIO compatible audio interface.

Linking up 2 or more computers gives you vast possibilities:

- Dedicate one computer to running VST instruments while recording audio tracks on another.
- If you need lots of audio tracks, you may simply add tracks on another computer.
- You could have one computer serve as a “virtual effect rack”, running CPU-intensive send effect plug-ins only.
- Since you can use VST System Link to connect different VST System Link applications on different platforms, you can take advantage of effect plug-ins and VST instruments that are specific to certain programs or platforms.

Requirements

The following equipment is required for VST System Link operation:

- 2 or more computers.
These can be of the same type or use different operating systems – it does not matter. For example, you can link an Intel-based PC to an Apple Macintosh without problems.
- Each computer must have audio hardware with specific ASIO drivers.
- The audio hardware must have digital inputs and outputs.
To be able to connect the computers, the digital connections must be compatible (i. e. the same digital formats and connection types must be available).
- At least one digital audio cable must be available for each computer in the network.
- A VST System Link host application must be installed on each computer.
Any VST System Link application can connect to another.

Additionally, use of a KVM switchbox is recommended.

Using a KVM switchbox

Whether you want to set up a multi-computer network or a small network in a limited space, it is a good idea to invest in a KVM (Keyboard, Video, Mouse) switchbox. With one of these you can use the same keyboard, monitor, and mouse to control each computer in the system, and you can switch between computers very rapidly. If you decide not to go this route, the network will function just the same, but you may end up doing a lot of jumping from one machine to the other while setting up!

Making connections

Below, we assume that you are connecting 2 computers. Should you have more than 2 computers, it is still best to start with 2 and add the others one by one once the system is working – this makes troubleshooting easier if you run into problems. For 2 computers, you will need 2 digital audio cables, one in each direction:

PROCEDURE

1. Use the first digital audio cable to connect the digital output of computer 1 to the digital input of computer 2.
 2. Use the other cable to connect the digital output of computer 2 to the digital input of computer 1.
If a card has more than one set of inputs and outputs, choose whichever one that suits you – for simplicity usually the first set is best.
-

Synchronization

Before you proceed, you need to make sure that the clock signals on your ASIO cards are synchronized correctly. This is essential when cabling any kind of digital audio system, not just VST System Link.

IMPORTANT

All digital audio cables by definition always carry a clock signal as well as audio signals, so you do not have to use a special word clock input and output for this (although you may find that you get a slightly more stable audio system if you do, especially when using multiple computers).

The clock mode or sync mode is set up in the ASIO control panel of the audio hardware. Proceed as follows:

PROCEDURE

1. From the Devices menu, open the Device Setup dialog.
2. On the VST Audio System page, select your audio interface from the ASIO Driver pop-up menu.
In the Devices list, the name of the audio interface now appears as a subentry to the “VST Audio System” entry.
3. In the Devices list, select your audio interface.
4. Click the Control Panel button.
The ASIO control panel appears.
5. Open the ASIO control panel on the other computer as well.
If you are using another VST System Link host application on that computer, check its documentation for details on how to open the ASIO control panel.

6. Now you need to make sure that one audio card is set to be the clock master and all other cards are set to be clock slaves (i. e. they listen for the clock signal coming from the clock master).
The naming and procedure for this differs depending on the audio hardware – consult its documentation if required. If you are using Steinberg Nuendo ASIO hardware, all cards default to the AutoSync setting. In this case you must set one of the cards (and only one) to “Master” in the Clock Mode section of the control panel.

RESULT

Typically, the ASIO control panel for an audio card contains some indication of whether or not the card receives a proper sync signal, including the sample rate of that signal.

This is a good indication that you have connected the cards and set up clock sync properly. Check your audio hardware’s documentation for details.

IMPORTANT

It is very important that only one card is the clock master, otherwise the network cannot function correctly. Once you have set this up, all the other cards in the network will take their clock signal from this card automatically.

The only exception to this procedure is if you are using an external clock – from a digital mixing desk or a special word clock synchronizer, for example. In that case you must leave all your ASIO cards in clock slave or AutoSync mode and make sure that each of them is listening for the signal coming from the synchronizer. This signal is usually passed through your ADAT cables or word clock connectors in a daisy chain fashion.

VST System Link and latency

The general definition of latency is the amount of time it takes any system to respond to whatever messages are sent to it. For example, if your system’s latency is high and you play VST instruments in realtime, you will get a noticeable delay between when you press a key and when you hear the sound of the VST instrument. Nowadays, most ASIO-compatible audio cards are capable of operating with very low latencies. Also, all VST applications are designed to compensate for latency during playback, making the playback timing tight.

However, the latency time of a VST System Link network is the total latency of all the ASIO cards in the system added together. Therefore it is extra important to minimize the latency times for each computer in the network.

IMPORTANT

The latency does not affect the synchronization – it is always perfectly in time. But it can affect the time it takes to send and receive MIDI and audio signals, or make the system seem sluggish.

To adjust the latency of a system, you adjust the size of the buffers in the ASIO control panel – the lower the buffer size, the lower the latency. It is best to keep to fairly low latencies (buffer sizes) if your system can handle it – about 12 ms or less is usually a good idea.

Setting up your software

Now it is time to set up your programs. The procedures below describe how to set things up in Cubase. If you are using another program on the other computer, please refer to its documentation.

Setting the sample rate

The projects in both programs must be set to use the same sample rate. Select “Project Setup...” from the Project menu and make sure that the sample rate is the same in both systems.

Streaming digital audio between applications

PROCEDURE

1. Create input and output busses in both applications and route these to the digital inputs and outputs.
The number and configuration of the busses depend on your audio hardware and on your needs. If you have a system with 8 digital i/o channels (such as an ADAT connection), you could create several stereo or mono busses, a surround bus together with a stereo bus, or any combination you need. The important thing is that you should have the same configuration in both applications – if you have 4 stereo output busses on computer 1, you want 4 stereo input busses on computer 2, etc.
2. Set things up so that computer 1 plays back some audio.
For example, you could import an audio file and play it back in Cycle mode.
3. In the Inspector or MixConsole, make sure that the channel containing the audio material is routed to one of the digital output busses.
4. On computer 2, open the MixConsole and locate the corresponding digital input bus.
The audio being played back should now “appear” in the program running on computer 2. You should see the input bus level meters moving.
5. Reverse this procedure so that computer 2 plays back and computer 1 “listens”.

RESULT

Now you have verified that the digital connection works as it should.

NOTE

From this point on in this chapter, we refer to the busses connected to the digital inputs and outputs as “VST System Link busses”.

Settings for the audio hardware

When you exchange VST System Link data between computers, it is important that the digital information is not changed in any way between the programs. Therefore, you should open the control panel (or additional application) for your audio hardware and make sure that the following conditions are met:

- If there are additional “format settings” for the digital ports that you use for VST System Link data, make sure that these are turned off.
For example, if you are using an S/PDIF connection for VST System Link, make sure that “Professional format”, Emphasis, and Dithering are turned off.
- If your audio hardware has a mixer application allowing you to adjust the levels of digital inputs and outputs, make sure that this mixer is disabled or that the levels for the VST System Link channels are set to ± 0 dB.

- Similarly, make sure no other forms of DSP (pan, effects, etc.) are applied to the VST System Link signal.

Notes for Hammerfall DSP users

If you are using RME Audio Hammerfall DSP audio hardware, the Totalmix function allows for extremely complex signal routing and mixing in the audio hardware. This can in some situations lead to “signal loops” in which case the VST System Link will not work. If you want to make absolutely sure this will not cause any problems, select the default or “plain” preset for the Totalmix function.

Activating VST System Link

Before you proceed, you need to make sure that VST System Link is set as the timecode source in the Project Synchronization Setup dialog and that the desired Sync options are activated.

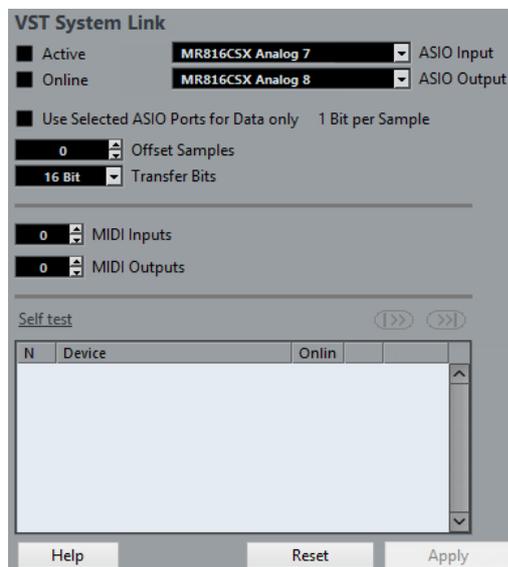
After setting up the inputs and outputs, you now need to define which input/output will carry the actual VST System Link information.

The VST System Link networking signal is carried on only one bit of one channel. This means that if you have an ADAT-based system which normally carries 8 channels of 24-bit audio, once you activate VST System Link you will have 7 channels of 24-bit audio and one channel of 23-bit audio (the least significant bit of this last channel will be used for networking). In practice this makes no discernible difference to the audio quality, since you will still have around 138 dB headroom on this channel.

To set things up, open the VST System Link panel:

PROCEDURE

1. From the Devices menu, open the Device Setup dialog.
2. In the Devices list to the left, select the “VST System Link” entry.
The VST System Link settings are shown to the right of the Devices list.



3. Use the ASIO Input and ASIO Output pop-up menus to define which channel is the networking channel.
 4. Activate the Active checkbox at the top left of the panel.
 5. Repeat the steps above for every computer in the network.
-

RESULT

As the computers are made active, you should see the Sending and Receiving indicators flashing on each active computer, and the name of each computer should appear in the list at the bottom of the pane. Each computer is assigned a random number – do not worry about this, it is just so the network knows internally which one is which.

- You can double-click on the name in bold (which is the name of the computer you are working on) and set it to whatever other name.
This name will appear in the VST System Link window of every computer on the network.

NOTE

If you do not see the name of each computer appearing once you have made it active, you need to check your settings. Go through the procedure above again and make sure that all ASIO cards are listening to the digital clock signals correctly, and that each computer has the correct inputs and outputs assigned to the VST System Link network.

RELATED LINKS

[Timecode Preferences](#) on page 910

Putting the network online

After each computer's name you will see whether it is online or not. When a computer is online, it will receive transport and timecode signals, and its sequencer application can be started and stopped by remote control. If it is off-line, it can only be started from its own keyboard – it is effectively an independent machine, although it is still on the network.

NOTE

Note that any computer can control any and all of the others – VST System Link is a peer-to-peer network and there is no absolute “master” computer.

To put all computers online, proceed as follows:

PROCEDURE

1. For all computers, activate the Online checkbox on the VST System Link page.
 2. Start playback on one computer to check that the system is working – all computers should start almost instantly and play perfectly in time, with sample-accurate precision.
 - The Offset Samples setting allows you to adjust whether one machine will play slightly ahead or behind the rest.
This is normally not needed, but occasionally with some hardware you may find that the lock is a few samples out. For now, leave it set to 0 – it will most likely be what you want.
 - The Transfer Bits setting allows you to specify whether you want to transfer 24 or 16 bits. This allows you to use older audio cards which do not support transfer of 24 bits.
-

RESULT

VST System Link sends and understands all transport commands (such as play, stop, fast forward, rewind, etc.). This allows you to control the entire network from one computer without a problem – try it! If you jump to a locator point on one machine, all other machines will also instantly jump to that locator point.

IMPORTANT

Make sure that all computers have their tempos set to the same value, otherwise your synchronization will be seriously skewed.

Scrubbing via VST System Link

You can scrub on one computer and have the video and audio on another computer scrub along. However, the playback on the linked systems may not be perfectly in sync while scrubbing and there are some further restrictions you should bear in mind when scrubbing via VST System Link:

- Use a remote controller for scrubbing.
- Always use the system where you started scrubbing to control the scrubbing, e. g. change the scrub speed or stop scrubbing.
Changing the scrub speed on a remote system will only change the speed on the local system.
- You can start playback on all systems.
This stops scrubbing and enters playback on all systems in sync.

Using MIDI

As well as supplying transport and sync control, VST System Link also supplies up to 16 MIDI ports, with 16 channels each.

PROCEDURE

1. Use the MIDI Inputs and MIDI Outputs value fields to specify the number of MIDI ports you need.
The default value is 0 MIDI In and 0 MIDI Out ports.
2. In the Project window, create a MIDI track and open the Inspector (top section).
3. If you now open the Input or Output Routing pop-up menu, you will find the specified System Link ports added to the list of MIDI inputs or outputs.



This allows you to route MIDI tracks to VST instruments running on another computer, as described in the application examples.

RELATED LINKS

[Application examples](#) on page 924

The “Use Selected ASIO Ports for Data only” setting

If you are sending huge amounts of MIDI data at once, there is a small possibility that you might run out of bandwidth on your VST System Link network. This will manifest itself by notes “choking” or timing becoming erratic.

If this happens, you can devote more bandwidth to MIDI by activating the “Use Selected ASIO Ports for Data only” option on the VST System Link page of the Device Setup dialog. When this is activated, the VST System Link information will be sent on the entire channel instead of just one bit, more than enough for all the MIDI you could ever hope to use. The downside is that you can no longer use this ASIO channel for audio transfer (do not connect it to a speaker!), thus leaving you with only 7 audio channels in our ADAT cable example. Depending on how you work, this might be a reasonable compromise.

Hearing the network audio

If you are using an external mixing desk, hearing your audio really is not an issue – just plug the outputs of each computer into the desired channels on the external mixing desk, start playback on one of the computers, and you are good to go.

However, many people prefer to mix internally inside the computer and just use a desk for monitoring (or maybe not use any external mixer at all). In this case you will need to select one computer to be your “main mix computer” and send the audio from your other computers into this.

In the following example, we assume you are using 2 computers, with computer 1 as your main mix computer and computer 2 running 2 additional stereo audio tracks, an FX channel track with a reverb plug-in and a VST instrument plug-in with stereo outputs.

PROCEDURE

1. Set things up so that you can listen to the audio playback from computer 1.
In other words, you need an unused set of outputs, e. g. an analog stereo output, connected to your monitoring equipment.
2. On computer 2, route each of the 2 audio tracks to a separate output bus.
These should be busses connected to the digital outputs – let’s call them Bus 1 and 2.
3. Route the FX channel track to another VST System Link bus (Bus 3).
4. Route the VST instrument channel to yet another bus (Bus 4).
5. Go back to computer 1 and check the corresponding 4 VST System Link input busses.
If you start playback on computer 2, the audio should “appear” on the input busses on computer 1. However, to mix these audio sources you need actual mixer channels.
6. Add 4 new stereo audio tracks on computer 1 and route these to the output bus you use for listening, e. g. to the analog stereo outputs.
7. For each of the audio tracks, select one of the 4 input busses.
Now, each computer 2 bus is routed to a separate audio channel on computer 1.
8. Activate monitoring for the 4 tracks.

RESULT

If you now start playback, the audio from computer 2 will be sent “live” to the new tracks on computer 1, allowing you to hear them together with any tracks you play back on computer 1.

Adding more tracks

What if you have more audio tracks than you have VST System Link busses (physical outputs)? Then you just use the computer 2 mixer as a submixer: Route several audio channels to the same output bus and adjust the output bus level if needed.

NOTE

If your audio cards have multiple sets of input and output connections, you can link up multiple ADAT cables and send audio via any of the busses on any of the cables.

Internal mixing and latency

One problem with mixing inside the computer is the latency issue we mentioned earlier. The VST engine always compensates for record latencies, but if you are monitoring through computer 1 you will hear a processing delay while you listen to signals coming from your other computers (not on your recording!). If your audio card in computer 1 supports ASIO Direct Monitoring you should definitely turn this on. You can find the setting on the VST Audio System device panel for your hardware. Most modern ASIO cards support this function. If yours does not, you may want to change the Offset Samples value on the VST System Link page to compensate for any latency issues.

RELATED LINKS

[ASIO Direct Monitoring](#) on page 227

Setting up a larger network

Setting up a larger network is not much more difficult than a 2-computer network. The main thing to remember is that VST System Link is a daisy chain system. In other words, the output of computer 1 goes to the input of computer 2, the output of computer 2 goes to the input of computer 3, and so on around the chain. The output of the last computer in the chain must always go back into the input of computer 1, to complete the ring.

Once you have done this, the transmission of all the transport, sync, and MIDI information to the whole network is handled pretty much automatically. However, where you may run into confusion in a large network is in the transmission of audio signals back to a central mix computer.

If you have lots of hardware inputs and outputs on your ASIO cards, you do not have to send audio via the chain at all, but can transmit it directly to the master mix computer via one or more of its other hardware inputs. For example, if you have a Nuendo Digiset interface or 9652 card on computer 1, you could use ADAT cable 1 for networking, ADAT cable 2 as a direct audio input from computer 2, and ADAT cable 3 as a direct audio input from computer 3.

You can also transmit audio via the ring system if you do not have enough hardware I/Os for direct audio transmission. For example, in a 4-computer scenario you could send audio from computer 2 into a channel in the mixer in computer 3, from there to a channel in the mixer in computer 4, and from there back to the master mixer in computer 1. This can certainly be tricky to set up, so for complex networks it is generally recommended to use ASIO cards with at least 3 separate digital I/Os.

Application examples

Using one computer for VST instruments

In this example, one computer will be used as main record and playback machine, and another computer as a virtual synth rack.

PROCEDURE

1. Record a MIDI track into computer 1.
2. Once you have finished recording, route the MIDI output of that track to VST System Link MIDI port 1.
3. On computer 2, open up the VST Instruments window and assign an instrument to the first slot in the rack.
4. Route the VST instrument channel to the desired output bus.
If you are using computer 1 as your main mixing computer, this would be one of the VST System Link output busses, connected to computer 1.
5. Create a new MIDI track in the Project window of computer 2 and assign the MIDI output of the track to the VST instrument you created.
6. Assign the MIDI input of the track to be VST System Link port 1.
Now, the MIDI track on computer 1 is routed to the MIDI track on computer 2, which in turn is routed to the VST instrument.
7. Now activate monitoring for the MIDI track on computer 2, so that it will listen and respond to any MIDI commands coming in.
In Cubase, click the Monitor button in the track list or Inspector.
8. Start playback on computer 1.
It will now send the MIDI information on the track to the VST instrument loaded on computer 2.

RESULT

Even with a slow computer you should be able to stack a whole bunch of extra VST instruments this way, expanding your sound palette considerably. Do not forget that VST System Link MIDI is also sample-accurate, and thus has much tighter timing than any hardware MIDI interface ever invented!

Creating a virtual effect rack

The effect sends for an audio channel in Cubase can either be routed to an FX channel track or to any activated group or output bus. This allows you to use a separate computer as a “virtual effect rack”.

PROCEDURE

1. On computer 2 (the machine you will use as effect rack), add a new stereo audio track.
You cannot use an FX channel track in this case, since the track must have an audio input.
2. Add the desired effect as an insert effect for the track.
Let's say you add a high-quality reverb plug-in.
3. In the Inspector, select one of the VST System Link busses as input for the audio track.
You want to use a separate VST System Link bus, which will only be used for this purpose.
4. Route the channel to the desired output bus.
If you are using computer 1 as your main mixing computer, this would be one of the VST System Link output busses, connected to computer 1.
5. Activate monitoring for the track.

6. Go back to computer 1 and select a track to which you want to add some reverb.
 7. Bring up the effect sends for the track in the Inspector or the MixConsole.
 8. Open the Send Routing pop-up menu for one of the sends and select the VST System Link bus assigned to the reverb in step 3.
 9. Use the Send slider to adjust the amount of effect as usual.
-

RESULT

The signal will be sent to the track on computer 2 and processed through its insert effect, without using any processor power on computer 1.

You can repeat the steps above to add more effects to the “virtual effect rack”. The number of effects available this way is only limited by the number of ports used in the VST System Link connection (and of course by the performance of computer 2, but given that it will not have to handle any recording or playback, you should be able to use quite a lot of effects).

Getting extra audio tracks

All computers on a VST System Link network are locked with sample-accuracy. Therefore, if you find that the hard drive on one computer is not fast enough to run as many audio tracks as you need, you can record new tracks on one of the other computers instead. This would create a “virtual RAID system”, with several disks all operating together. All tracks will remain locked together just as tightly as if they were all running on the same machine. This means that you effectively have an unlimited track count! Need another 100 tracks? Just add another computer.

Dedicated Video Playback

Playback of high-resolution video can be taxing on a system’s CPU. By dedicating one computer for video playback via System Link, you can free up resources on your main CPU for audio and MIDI processing. Since all transport commands will respond on the VST System Link computers, scrubbing video is possible even when it is coming from another computer.

Video

Cubase supports the integration of video files in your project.

You can play back video files in various formats and via different output devices from within Cubase, extract the audio material from a video file, and edit your music to the video.

Video File Compatibility

When working on a project involving a video file, you must make sure that the video file type works on your system.

NOTE

If you are not able to play back a specific video file, use an external application to convert the file into a compatible format.

To find out what video files are supported, refer to the Help Center on the Steinberg web site.

RELATED LINKS

[Codecs](#) on page 926

Video Container Formats

Video and other multimedia files come in a container format.

This container holds various streams of information including video and audio, but also metadata such as synchronization information required to play back audio and video together. Data regarding creation dates, authors, chapter markings, and more can also be held within the container format.

The following container formats are supported by Cubase:

MOV

This is a QuickTime movie.

MPEG-4

This format can contain various metadata for streaming, editing, local playback, and interchange of content. Its file extension is `.mp4`.

AVI

This is a multimedia container format introduced by Microsoft.

Codecs

Codecs are methods of data compression used to make video and audio files smaller and more manageable for computers.

For further details, refer to the Help Center on the Steinberg web site.

Frame Rates

Cubase supports different video and film frame rates.

Frame rate (speed)

Regardless of the frame counting system, the actual speed at which frames of video go by in realtime is the true frame rate.

In Cubase the following frame rates are available:

23.9 fps (Cubase Pro only)

This frame rate is used for film that is being transferred to NTSC video and must be slowed down for a 2-3 pull-down telecine transfer. It is also used for the type of HD video referred to as "24 p".

24 fps

This is the true speed of standard film cameras.

24.9 fps (Cubase Pro only)

This frame rate is commonly used to facilitate transfers between PAL and NTSC video and film sources. It is mostly used to correct for some error.

25 fps

This is the frame rate of PAL video.

29.97 fps

This is the frame rate of NTSC video. The count can be either non-drop or drop-frame.

30 fps

This frame rate is not a video standard anymore but has been commonly used in music recording. Many years ago it was the black and white NTSC broadcast standard. It is equal to NTSC video being pulled up to film speed after a 2-3 telecine transfer.

59.98 fps (Cubase Pro only)

This rate is also referred to as "60 p". Many professional HD cameras record at 59.98 fps. While 60 fps could theoretically exist as a frame rate, no current HD video camera records at a full 60 fps as a standard rate.

Non-Supported Frame Rates

Video files with non-supported frame rates can be played back, but the time displays are not correct in this case and proper positioning is not guaranteed.

Furthermore, audio and video may not be in sync.

NOTE

If you want to use files with frame rates that are not supported by Cubase, we recommend that you use an external application to convert the video file to a suitable frame rate.

Video Output Devices

Cubase supports several video output devices.

Viewing video files onscreen in the **Video Player** window may work just fine for many applications, but often it is necessary to display video in a large format for viewing small details and so others involved in the session can also see the video. Cubase provides the ability to use several types of video output devices to accomplish this.

Dedicated Video Cards

You can use a dedicated video card.

The following video card is supported:

- Blackmagic Design video output devices

Video is sent directly to the output of this video device.

IMPORTANT

You must install the appropriate driver for the video device and set the video card output to the video file resolution used in your project.

RELATED LINKS

[Video Player Setup](#) on page 930

Preparations for Creating Video Projects

Before you can start working with video in Cubase, some basic preparations must be made.

In Cubase, you may work with multiple video files of different formats on the same video track.

NOTE

For proper synchronization of audio and video events, make sure that the project frame rate matches the frame rate of the video file.

RELATED LINKS

[Project Setup Dialog](#) on page 88

Importing Video Files

If you have a compatible video file, you can import it into your project.

PROCEDURE

1. Select **File > Import > Video File**.
 2. In the **Import Video** dialog, select the video file that you want to import.
 3. Optional: Activate **Extract Audio from Video** to import any embedded audio streams.
 4. Click **Open**.
-

RESULT

Cubase creates a video track with a video event. If **Extract Audio from Video** was activated, an audio track with an audio event is positioned below the video track. The corresponding audio clip is saved in the **Pool Record** folder.

NOTE

You can also import video files by dragging them from the **MediaBay**, the File Explorer/Mac OS Finder and dropping them in your project. If you want Cubase to automatically extract the audio, make sure **Extract Audio on Import Video File** is activated in the **Preferences** dialog on the **Video** page.

RELATED LINKS

[Pool](#) on page 511

[Extract Audio from Video](#) on page 933

Adopting the Frame Rate

To ensure that the time display of Cubase corresponds to the actual frames in the video, you must set the project frame rate to the frame rate of the imported video file.

PREREQUISITE

The frame rate of the imported video file differs from the project frame rate.



PROCEDURE

1. Select **Project > Project Setup**.
 2. In the **Project Setup** dialog, click **Get from Video**.
 3. Click **OK**.
-

RESULT

- If Cubase supports the frame rate of the video, the project frame rate is adopted to it. If needed, the project start time is automatically adjusted to reflect the change in frame rate. For example, if the project frame rate is switched from 30 fps to 29.97 fps, the project start time is adopted so that all the events in the project remain at the same positions in relation to real time.

NOTE

If you want the project start time to remain the same, you must manually change it back. In this case, you must snap the video event to the timeline to ensure proper positioning and synchronization within the project.

RELATED LINKS

[Non-Supported Frame Rates](#) on page 927

Thumbnail Cache Files

For every imported video, file Cubase automatically creates a thumbnail cache file.

RELATED LINKS

[Manually Generating Thumbnail Cache Files](#) on page 930

Manually Generating Thumbnail Cache Files

You can manually generate thumbnail cache files. This is necessary if a thumbnail cache file could not be generated during import because the folder is write-protected, or because you have edited the file with an external video editing application.

PROCEDURE

- Do one of the following:
 - In the **Pool**, right-click the video file and select **Generate Thumbnail Cache**.
 - In the **Project** window, right-click the video event, and select **Media > Generate Thumbnail Cache**.

NOTE

Refreshing an already existing thumbnail cache file can be done only from within the **Pool**.

RESULT

The thumbnail cache file is generated in the background so that you can continue working with Cubase.

Preparations for Video Playback

You can play back imported video files from within Cubase by using the transport controls.

For this to work, you must activate and set up a video output device.

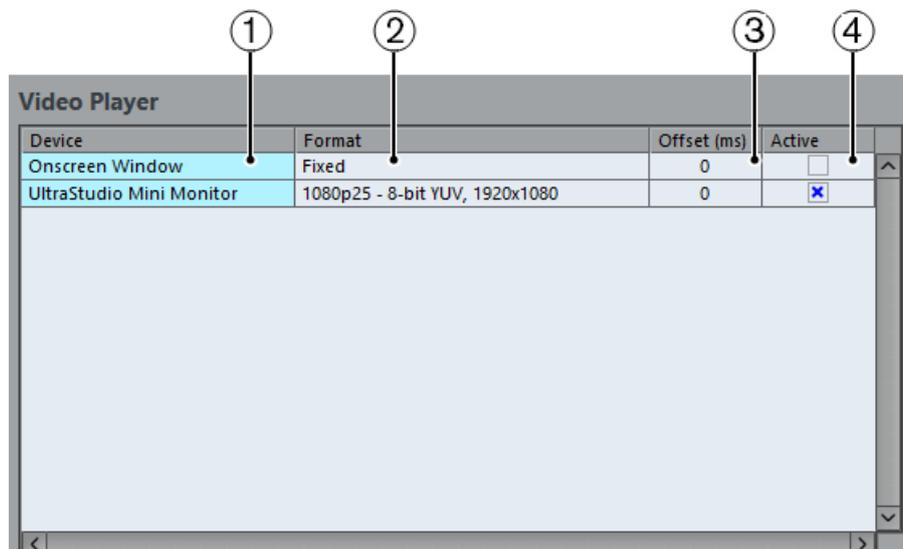
IMPORTANT

Your graphics card must support OpenGL 2.0 or higher.

Video Player Setup

The **Video Player** setup page in the **Device Setup** dialog allows you to set up your video player, and to check if your video equipment allows for video playback from within Cubase.

- To open the **Video Player** page, select **Devices > Device Setup** and activate **Video Player** in the **Devices** list to the left.



The following options are displayed:

1. **Device**
Lists the video output devices that are available on your system.
2. **Format**
Allows you to select an output format.

NOTE

The **Onscreen Window** device only supports a fixed format.

3. **Offset**
If the video image does not match the audio, you can enter an offset value in milliseconds to specify how much earlier the video should be delivered. This compensates for the display delay. The offset is only used during playback. It is saved globally for each output device and is independent of the project.
4. **Active**
Allows you to activate the device that you want to use for playing back video.

Activating a Video Output Device

PROCEDURE

1. Select **Devices > Device Setup**.
2. Activate **Video Player** in the **Devices** list to the left.
The available video output devices are listed in the **Device** column.
3. In the **Active** column, activate the checkbox for the device that you want to use for playing back video.

NOTE

If you have no external device connected, you can use the **Onscreen Window** device that allows you to play back the video file on your computer monitor.

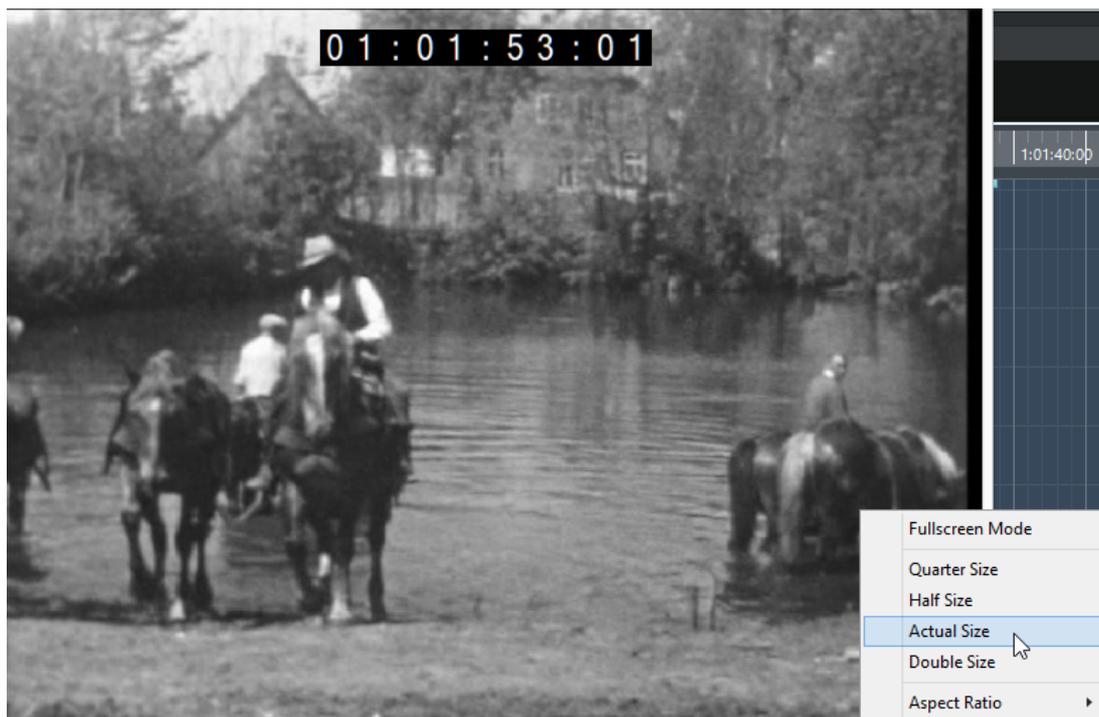
RELATED LINKS

[Video Output Devices](#) on page 928

Video Player Window

The **Video Player** window provides different size options for video playback on your computer screen. However, the larger the size of the window and the higher the resolution of your video, the more processor load is needed.

- To open the **Video Player** window, select **Devices > Video Player**.



Fullscreen Mode

Sets the window to full screen mode. To exit full screen mode, open the context menu and select **Exit Fullscreen Mode** or press **Esc**.

Quarter Size

Reduces the window to a quarter of the actual size.

Half Size

Reduces the window to half the actual size.

Actual Size

Sets the window to the size of the video.

Double Size

Enlarges the window to twice the actual size.

Aspect Ratio

You can also drag the borders of the **Video Player** window to resize it. However, this might lead to a distorted image. To prevent this, you can set an option from the **Aspect Ratio** pop-up menu.

- If you select **None**, the aspect ratio of the video is not kept when you resize the window. The image is enlarged/reduced to occupy the whole Video Player window.
- **Internal** allows you to resize the window freely while keeping the aspect ratio of the video. Borders might be displayed around the video image to fill the window.
- **External** allows you to resize the window within some limits so that the video image always fills the full window and its aspect ratio is kept.

NOTE

In full screen mode, the aspect ratio of the video is always kept.

Scrubbing Video

You can scrub video events, that is, play them back forwards or backwards.

PROCEDURE

1. Select **Devices > Video Player**.
 2. Do one of the following:
 - Click in the **Video Player** window and move the mouse to the left or to the right.
 - Use a jog wheel on a remote controller.
-

Editing Video

Video events are created automatically when you import a video file.

You can view and edit video events in the **Project** window. A video event triggers the playback of the corresponding video clip.

You can copy and trim video events. You can also lock video events in the **Project** window.

You cannot draw, glue, and mute video events, or apply fades or crossfades.

RELATED LINKS

[Pool](#) on page 511

Extract Audio from Video

You can extract the audio stream of a video file on import.

To extract audio from a video file, do one of the following:

- Select **File > Import > Video File** and activate **Extract Audio from Video** in the dialog.
- Select **Media > Extract Audio from Video File**, and select the video file in the file dialog.
- Select **File > Import > Audio from Video File**.

This creates an audio clip in the **Pool**, but does not add any events to the **Project** window.

A dialog is displayed allowing you to select different import options.

The extracted audio stream is added to the project on a new audio track and can be edited like all other audio material.

RELATED LINKS

[Importing Video Files](#) on page 928

Introduction

ReWire is a special protocol for streaming audio between two computer applications.

Developed by Propellerhead Software and Steinberg, ReWire provides the following possibilities and features:

- Realtime streaming of up to 256 (Cubase Artist: 128) separate audio channels, at full bandwidth, from the synthesizer application into the mixer application.
In this case, the mixer application is of course Cubase. An example of a synthesizer application is Propellerhead Software's Reason.
- Automatic, sample accurate synchronization between the audio in the two programs.
- The possibility to have the two programs share one audio card and take advantage of multiple outputs on that card.
- Linked transport controls that allow you to play, rewind, etc., either from Cubase or from the synthesizer application (provided it has some kind of transport functionality).
- Automatic audio mixing functions of separate channels as required.
In the case of Reason, for example, this allows you to have separate channels for the different devices.
- Additionally, ReWire offers the possibility to route MIDI tracks in Cubase to the other application, for full MIDI control.
For each ReWire compatible device, a number of extra MIDI outputs will be made available in Cubase. In the case of Reason, this allows you to route different MIDI tracks in Cubase to different devices in Reason, with Cubase serving as the main MIDI sequencer.
- The overall load on your system is much reduced, compared to when using the programs together in the conventional way.

Launching and quitting

When using ReWire, the order in which you launch and quit the two programs is very important.

Launching for normal use with ReWire

PROCEDURE

1. First launch Cubase.
 2. Enable one or several ReWire channels in the ReWire Device dialog for the other application.
 3. Launch the other application.
It may take slightly longer for the application to start when you are using ReWire.
-

RELATED LINKS

[Activating ReWire channels](#) on page 935

Quitting a ReWire session

When you are finished, you also need to quit the applications in a special order.

PROCEDURE

1. First quit the synthesizer application.
 2. Then quit Cubase.
-

Launching both programs without using ReWire

We cannot think of any scenario, in which you would need to run Cubase and the synthesizer application simultaneously on the same computer, without using ReWire, but you can.

PROCEDURE

1. First launch the synthesizer application.
2. Then launch Cubase.

NOTE

Please note that the two programs now compete for system resources such as audio cards, just as when running either with other, non-ReWire audio applications.

Activating ReWire channels

ReWire supports streaming of up to 256 (Cubase Artist: 128) separate audio channels. The exact number of available ReWire channels depends on the synthesizer application. Using the ReWire Device panels in Cubase, you can specify which of the available channels you want to use.

PROCEDURE

1. Open the Devices menu and select the menu item with the name of the ReWire application. All recognized ReWire compatible applications will be available on the menu. The ReWire panel appears. This consists of a number of rows, one for each available ReWire channel.
 2. Click on the power buttons to the left to activate/deactivate the desired channels. The buttons light up to indicate activated channels. Please note that the more ReWire channels you activate, the more processing power is required. For information about exactly what signal is carried on each channel, refer to the documentation of the synthesizer application.
 3. If desired, double-click on the labels in the right column, and type in another name. These labels will be used in the Cubase MixConsole to identify the ReWire channels.
-

Using the transport and tempo controls

IMPORTANT

This is only relevant if the synthesizer application has some sort of built-in sequencer or similar.

Basic transport controls

When you run ReWire, the transports in the two programs are completely linked. It does not matter in which program you play, stop, fast forward or rewind. However, recording (if applicable) is still completely separate in the two applications.

Loop settings

If there is a loop or cycle facility in the synthesizer application, that loop will be completely linked to the cycle in Cubase. This means that you can move the start and end point for the loop or turn the loop on or off in either program, and this will be reflected in the other.

Tempo settings

As far as tempo goes, Cubase is always the master. This means that both programs will run in the tempo set in Cubase.

However, if you are not using the tempo track in Cubase, you can adjust the tempo in either program, and this will immediately be reflected in the other.

IMPORTANT

If you are using the tempo track in Cubase (i. e. the Tempo button is activated on the Transport panel), you should not adjust the tempo in the synthesizer application, since a tempo request from ReWire will automatically deactivate the tempo track in Cubase!

How the ReWire channels are handled

When you activate ReWire channels in the ReWire Device panels, they will become available as channels in the MixConsole.

The ReWire channels have the following properties:

- ReWire channels may be any combination of mono and stereo, depending on the synthesizer application.
- ReWire channels have the same functionality as regular audio channels. This means you can set volume and pan, add EQ, insert effects and sends, and route the channel outputs to groups or busses. However, ReWire channels have no monitor buttons.
- All channel settings can be automated using the Read/Write buttons. When you write automation, channel automation tracks will automatically appear in the Project window. This allows you to view and edit the automation graphically, just as with VST instrument channels, etc.
- You can mix down the audio from ReWire channels to a file on your hard disk with the Export Audio Mixdown function. You can export the output bus to which you have routed the ReWire channels. Cubase Pro only: You can also export individual ReWire channels directly – “rendering” each ReWire channel to a separate audio file.

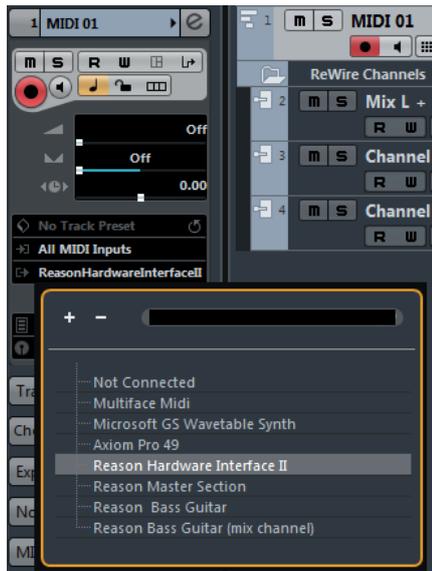
RELATED LINKS

[Mixing Down to Audio Files](#) on page 891

Routing MIDI via ReWire

When using Cubase with a ReWire-compatible application, additional MIDI outputs will automatically appear on the MIDI Output pop-up menus for MIDI tracks. This allows you to play

the synthesizer application via MIDI from Cubase, using it as one or several separate MIDI sound sources.



The MIDI outputs for a Reason song. Here, each output goes directly to a device in the Reason rack.

- The number and configuration of MIDI outputs depends on the synthesizer application.

Considerations and limitations

Sample rates

Synthesizer applications may be limited to audio playback in certain sample rates. If Cubase is set to a sample rate other than those, the synthesizer application will play back at the wrong pitch. Consult the documentation of the synthesizer application for details.

ASIO drivers

ReWire works well with ASIO drivers. By using the Cubase bus system you can route sounds from the synthesizer application to various outputs on an ASIO compatible audio card.

Key Commands

Introduction

Most of the main menus in Cubase have keyboard shortcuts for certain items on the menus. In addition, there are numerous other Cubase functions that can be performed via key commands. These are all default settings.

You can customize existing key commands to your liking, and also add commands for many menu items and functions that have no key command assigned.

You can find out for which functions key commands can be assigned by looking in the Key commands dialog (see below), or by checking the tooltip for a particular interface element. If a tooltip shows [!] at the end, you can assign a key command to this function. Assigned key commands are shown in the tooltips in square brackets.



IMPORTANT

You can also assign tool modifier keys, i. e. keys that change the behavior of various tools when pressed. This is done in the Preferences dialog.

RELATED LINKS

[Setting up tool modifier keys](#) on page 943

How are key commands settings saved?

Every time you edit or add any key command assignment, this is stored as a global Cubase preference – not as part of a project. If you edit or add a key command assignment, any subsequent projects that you create or open will use these modified settings. However, the default settings can be restored at any time by clicking the Reset All button in the Key Commands dialog.

In addition, you can save key commands settings as a “key commands file”, which is stored separately and can be imported into any project. This way you can quickly and easily recall customized settings, when moving projects between different computers, for example. The settings are saved in an XML file on the hard disk.

RELATED LINKS

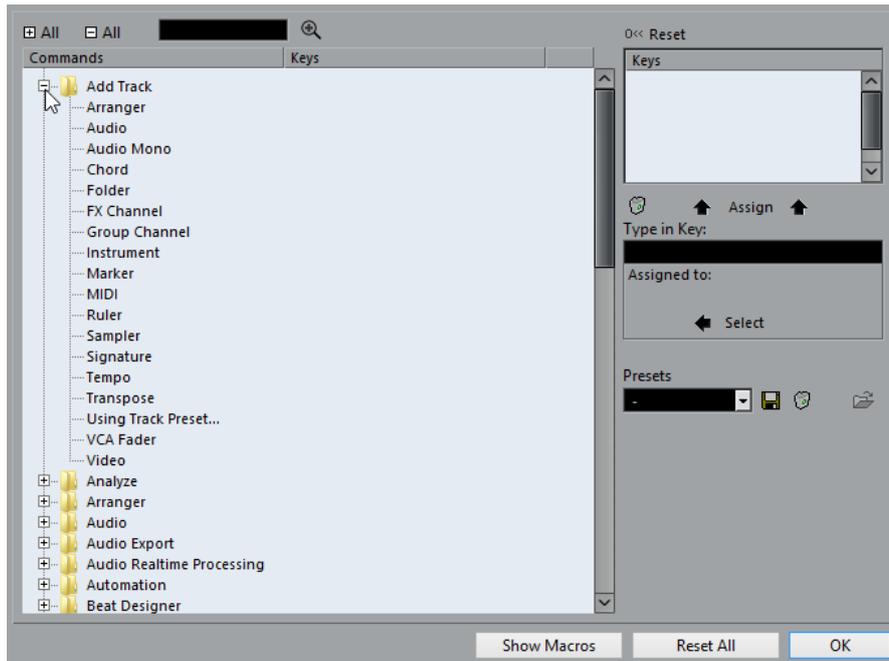
[Saving key commands presets](#) on page 942

Setting up key commands

Adding or modifying a key command

In the Key Commands dialog you will find all main menu items and a large number of other functions, arranged in a hierarchical way similar to the File Explorer and Mac OS Finder. The function categories are represented by a number of folders, each containing various menu items and functions.

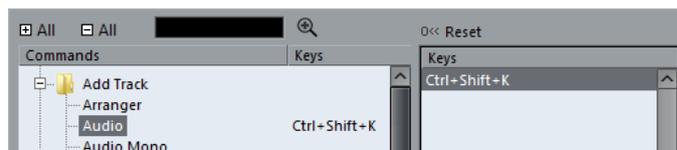
When you open a category folder by clicking the “+” sign beside it, the items and functions it contains are displayed with the assigned key commands.



To add a key command, proceed as follows:

PROCEDURE

1. Open the File menu and select “Key Commands...”.
The Key Commands dialog opens.
2. In the Commands list on the left, choose a category.
3. Click the “+” sign to open the category folder and display the items it contains.
Note that you can also click the “global” “+” and “-” signs in the top left corner to open and close all category folders at once.
4. In the list, select the item to which you want to assign a key command.
Already assigned key commands are shown in the Keys column as well as in the Keys section in the top right corner.



5. Alternatively, you can use the search function in the dialog to find the desired item.
For a description of how to use the search function, see below.

6. When you have found and selected the desired item, click in the "Type in Key" field and enter a new key command.
You can choose any single key or a combination of one or several modifier keys (**Alt**, **Ctrl/Cmd**, **Shift**) plus any key. Just press the keys you want to use.
7. If the key command you enter is already assigned to another item or function, this is displayed below the "Type in Key" field.
You can either ignore this and proceed to assign the key command to the new function instead, or you can select another key command.
8. Click the Assign button above the field.
The new key command appears in the Keys List.

IMPORTANT

If the key command you enter is already assigned to another function, you will get a warning message asking if you really want to reassign the command to the new function.

9. Click OK to exit the dialog.

NOTE

You can set up several different key commands for the same function. Adding a key command to a function that already has another key command will not replace the key command previously defined for the function. If you want to remove a key command, see below.

Searching for key commands

If you want to know which key command is assigned to a certain function in the program, you can use the Search function in the Key Commands dialog.

PROCEDURE

1. Click in the search text field at the top left of the dialog and type in the function for which you want to know the key command.
This is a standard word search function, so you should type the command as it is spelled in the program. Partial words can be used; to search for all quantize related commands, type "Quantize", "Quant", etc.
 2. Click the Search button (the magnifying glass icon).
The search is conducted and the first matching command is selected and displayed in the Commands list below. The Keys column and the Keys list show the assigned key commands, if any.
 3. To search for more commands containing the word(s) you entered, click the Search button again.
 4. When you are done, click OK to close the dialog.
-

Removing a key command

PROCEDURE

1. Use the list of categories and commands to select the item or function for which you want to remove a key command.
The key command is shown in the Keys column and the Keys list.
2. Select the key command in the Keys list and click the Delete button (the trash icon).
You are asked whether you really want to remove the key command.
3. Click Remove to remove the selected key command.

4. Click OK to close the dialog.
-

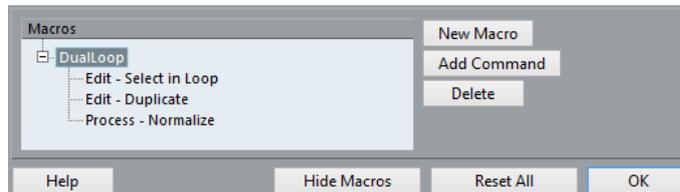
Setting up macros

A macro is a combination of several functions or commands to be performed in one go. For example, you can select all events on the selected audio track, remove DC offset, normalize the events and duplicate them, all with a single command.

Macros are set up in the Key Commands dialog as follows:

PROCEDURE

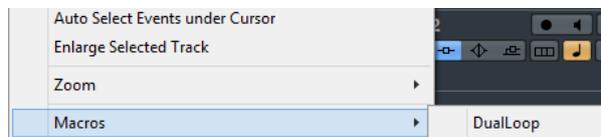
1. Click the Show Macros button.
The macro settings are shown in the lower part of the dialog. To hide these from view, click the button (now renamed Hide Macros) again.
2. Click New Macro.
A new, unnamed macro appears in the Macros list. Name it by typing the desired name. You can rename a macro at any time by selecting it in the list and typing in a new name.
3. Make sure that the macro is selected, and use the categories and commands in the upper half of the dialog to select the first command you want to include in the macro.
4. Click Add Command.
The selected command appears in the list of commands in the Macros section.
5. Repeat the procedure to add more commands to the macro.
Note that commands are added after the selected command in the list. This allows you to insert commands “in the middle” of an existing macro.



A macro with 3 commands

- To remove a command from the macro, select it in the Macros list and click Delete.
- Similarly, to remove an entire macro, select it in the Macros list and click Delete.

After you have closed the Key Commands dialog, all macros you have created appear at the bottom of the Edit menu in the Macros submenu, available for instant selection.



You can also assign key commands to macros. All macros you have created appear in the upper section of the Key Commands dialog under the Macros category – just select a macro and assign a key command as with any other function.

Saving key commands presets

As mentioned above, any changes made to the key commands are automatically stored as a Cubase preference. However, it is also possible to save key commands settings separately. This way, you can save any number of different key command settings as presets for instant recall.

PROCEDURE

1. Set up the key commands to your liking.
When setting up key commands, remember to click “Assign” to make the changes.
 2. Click the Save button next to the Presets pop-up menu.
A dialog opens, allowing you to type in a name for the preset.
 3. Click OK to save the preset.
Your saved key commands settings are now available on the Presets pop-up menu.
-

Loading key command presets

To load a key command preset, simply select it from the Presets pop-up menu.

NOTE

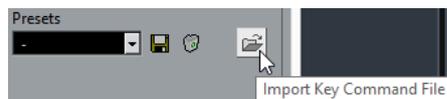
The key command settings you load will replace the current key command settings for the same functions (if any). If you have macros of the same name as those stored in the preset you load, these will be replaced too. If you want to be able to revert to your current settings again, make sure to save them first, as described above!

Loading earlier key commands settings

If you have saved key commands settings with an earlier program version, it is possible to use them in this Cubase version, by using the “Import Key Command File” function, which lets you load and apply saved key commands.

PROCEDURE

1. Open the Key Commands dialog.
2. Click the “Import Key Command File” button to the right of the Presets pop-up menu.
A standard file dialog opens.



3. In the file dialog, use the “Files of type” pop-up menu to specify if you want to import a key commands file (“.key”) or a macro commands file (extension “.mac”).
When you have imported an older file, you might want to save it as a preset (see above) to be able to access it from the Presets pop-up menu in the future.
 4. Navigate to the file you want to import and click “Open”.
The file is imported.
 5. Click OK to exit the Key Commands dialog and apply the imported settings.
The settings in the loaded key commands file or macros file now replace the current settings.
-

About the Reset and Reset All functions



These 2 buttons in the Key Commands dialog will both restore the default settings. The following rules apply:

- “Reset” will restore the default key command setting for the function selected in the Commands list.
- “Reset All” will restore the default key commands for all commands.

IMPORTANT

Note that the “Reset All” operation will cause any changes made to the default key commands to be lost! If you want to be able to revert to these settings again, make sure to save them first!

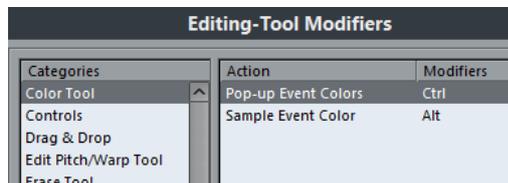
Setting up tool modifier keys

A tool modifier key is a key you can press to get an alternate function when using a tool. For example, clicking and dragging an event with the Object Selection tool normally moves it – holding down a modifier key (by default **Alt**) while dragging will copy it instead.

The default assignments for tool modifier keys can be found in the Preferences dialog (Editing-Tool Modifiers page). Here, you can also edit them:

PROCEDURE

1. Open the Preferences dialog and select the Editing-Tool Modifiers page.



2. Select an option in the Categories list, and locate the action for which you want to edit the modifier key.
For example, the “Copy” action mentioned above resides in the category “Drag & Drop”.
 3. Select the action in the Action list.
 4. Hold down the desired modifier key(s) and click the Assign button.
The current modifier keys for the action are replaced. If the modifier keys you pressed are already assigned to another tool, you will be asked whether you want to overwrite them. If you do, this will leave the other tool without any modifier keys assigned.
 5. When you are done, click OK to apply the changes and close the dialog.
-

The default key commands

Below, the default key commands are listed according to category.

NOTE

When the Virtual Keyboard is displayed, the usual key commands are blocked because they are reserved for the Virtual Keyboard. The only exceptions are: **Ctrl/Cmd-S** (Save), **Num *** (Start/Stop)

Record), **Space** (Start/Stop Playback), **Num 1**(Jump to left locator), **Delete** or **Backspace** (Delete), **Num /** (Cycle on/off), **F2** (Show/Hide Transport panel), and **Alt-K** (Show/Hide Virtual Keyboard).

Audio category

Option	Key command
Adjust Fades to Range	A
Auto-Grid	Shift-Q
Crossfade	X

Automation category

Option	Key command
Open Panel	F6
Read Automation for All Tracks On/Off	Alt-R
Write Automation for All Tracks On/Off	Alt-W

Chords category

Option	Key command
Chord Pads	Ctrl/Cmd-Shift-C

Devices category

Option	Key command
MixConsole Lower Zone	Alt-F3
Mixer	F3
Video	F8
Virtual Keyboard	Alt-K
VST Connections	F4
VST Instruments	F11
VST Performance	F12

Edit category

Option	Key command
Activate/Deactivate Focused Object	Alt-A
Auto-Scroll On/Off	F
Copy	Ctrl/Cmd-C
Cut	Ctrl/Cmd-X
Cut Time	Ctrl/Cmd-Shift-X
Delete	Delete or Backspace
Delete Time	Shift-Backspace
Duplicate	Ctrl/Cmd-D
Expand/Reduce	Alt-E
Find Track/Channel	Ctrl/Cmd-F
Group	Ctrl/Cmd-G
Group Editing on Selected Tracks On/Off	K
Insert Silence	Ctrl/Cmd-Shift-E
Invert	Alt-F
Left Selection Side to Cursor	E
Lock	Ctrl/Cmd-Shift-L
Move to Cursor	Ctrl/Cmd-L
Move to Front (Uncover)	U
Mute	M
Mute Events	Shift-M
Mute/Unmute Objects	Alt-M
Open	Ctrl/Cmd-E
Paste	Ctrl/Cmd-V
Paste at Origin	Alt-V

Key Commands
The default key commands

Option	Key command
Paste Relative to Cursor	Shift-V
Paste Time	Ctrl/Cmd-Shift-V
Primary Parameter: Decrease	Ctrl/Cmd-Shift-Down Arrow
Primary Parameter: Increase	Ctrl/Cmd-Shift-Up Arrow
Record Enable	R
Redo	Ctrl/Cmd-Shift-Z
Repeat	Ctrl/Cmd-K
Right Selection Side to Cursor	D
Secondary Parameter: Decrease	Ctrl/Cmd-Shift-Left Arrow
Secondary Parameter: Increase	Ctrl/Cmd-Shift-Right Arrow
Select All	Ctrl/Cmd-A
Select None	Ctrl/Cmd-Shift-A
Snap On/Off	J
Solo	S
Split At Cursor	Alt-X
Split Range	Shift-X
Stationary Cursor	Alt-C
Undo	Ctrl/Cmd-Z
Ungroup	Ctrl/Cmd-U
Unlock	Ctrl/Cmd-Shift-U
Unmute Events	Shift-U
Write	W

Editors category

Option	Key command
Edit In-Place	Ctrl/Cmd-Shift-I
Open Score Editor	Ctrl/Cmd-R
Open/Close Editor	Return

File category

Option	Key command
Close	Ctrl/Cmd-W
New	Ctrl/Cmd-N
Open	Ctrl/Cmd-O
Quit	Ctrl/Cmd-Q
Save	Ctrl/Cmd-S
Save As	Ctrl/Cmd-Shift-S
Save New Version	Ctrl/Cmd-Alt-S

Media category

Option	Key command
Open MediaBay	F5
Preview Cycle On/Off	Shift-Num /
Preview Start	Shift-Enter
Preview Stop	Shift-Num 0
Search MediaBay	Shift-F5
Toggle Attribute Inspector	Ctrl/Cmd-Alt-Num 6
Toggle Filters	Ctrl/Cmd-Alt-Num 5
Toggle Location Tree	Ctrl/Cmd-Alt-Num 4
Toggle Locations	Ctrl/Cmd-Alt-Num 8

Option	Key command
Toggle Previewer	Ctrl/Cmd-Alt-Num 2

MIDI category

Option	Key command
Show/Hide Controller Lanes	Alt-L

MixConsole History

Option	Key command
Undo MixConsole Step	Alt-Z
Redo MixConsole Step	Alt-Shift-Z

Navigate category

Option	Key command
Add Down: Expand/Undo selection in the Project window to the bottom/ Move selected event in the Key Editor down 1 octave	Shift-Down Arrow
Add Left: Expand/Undo selection in the Project window/ Key Editor to the left	Shift-Left Arrow
Add Right: Expand/Undo selection in the Project window/ Key Editor to the right	Shift-Right Arrow
Add Up: Expand/Undo selection in the Project window to the top/Move selected event in the Key Editor up one octave	Shift-Up Arrow
Bottom: Select bottom track in the track list	End
Down: Select next in the Project window/Move selected event in the Key Editor one semitone down	Down Arrow

Option	Key command
Left: Select next in the Project window/Key Editor	Left Arrow
Right: Select next in the Project window/Key Editor	Right Arrow
Toggle Selection	Ctrl/Cmd-Space
Top: Select top track in the track list	Home
Up: Select next in the Project window/ Move selected event in the Key Editor one semitone up	Up Arrow

Nudge category

Option	Key command
End Left	Alt-Shift-Left Arrow
End Right	Alt-Shift-Right Arrow
Left	Ctrl/Cmd-Right Arrow
Right	Ctrl/Cmd-Left Arrow
Start Left	Alt-Left Arrow
Start Right	Alt-Right Arrow

Project category

Option	Key command
Open Browser	Ctrl/Cmd-B
Open Markers	Ctrl/Cmd-M
Open Pool	Ctrl/Cmd-P
Open Tempo Track	Ctrl/Cmd-T
Remove Selected Tracks	Shift-Delete

Option	Key command
Setup	Shift-S

Quantize category

Option	Key command
Quantize	Q

Set Insert Length category

Option	Key command
1/1	Alt-1
1/2	Alt-2
1/4	Alt-3
1/8	Alt-4
1/16	Alt-5
1/32	Alt-6
1/64	Alt-7
1/128	Alt-8
Toggle Dotted	Alt-.
Toggle Triplet	Alt-,

Tool category

Option	Key command
Draw tool	8
Drumstick tool	0
Erase tool	5
Glue tool	4
Mute tool	7

Option	Key command
Next Tool	F10
Play tool	9
Previous Tool	F9
Range tool	2
Select tool	1
Split tool	3
Zoom tool	6

TrackVersions category

Option	Key command
Duplicate Version	Ctrl/Cmd-Shift-D
New Version	Ctrl/Cmd-Shift-N
Next Version	Ctrl/Cmd-Shift-H
Previous Version	Ctrl/Cmd-Shift-G

Transport category

Option	Key command
Activate Punch In	I
Activate Punch Out	O
Cycle	Num /
Enter Left Locator	Shift-L
Enter Project Cursor Position	Shift-P
Enter Punch In Position	Shift-I
Enter Punch Out Position	Shift-O
Enter Right Locator	Shift-R
Enter Tempo	Shift-T

Option	Key command
Enter Time Signature	Shift-C
Exchange Time Formats	.
Fast Forward	Shift-Num +
Fast Rewind	Shift-Num -
Forward	Num +
Go to Left Locator	Num 1
Go to Project Start	Num . or Num , or Num ;
Go to Right Locator	Num 2
Insert Marker (Windows only)	Insert
Locate Next Event	N
Locate Next Hitpoint	Alt-N
Locate Next Marker	Shift-N
Locate Previous Event	B
Locate Previous Hitpoint	Alt-B
Locate Previous Marker	Shift-B
Locate Selection Start	L
Locators to Selection	P
Loop Selection	Alt-P
Nudge Cursor Left	Ctrl/Cmd-Num -
Nudge Cursor Right	Ctrl/Cmd-Num +
Panel (Transport panel)	F2
Play Selection Range	Alt-Space
Recall Cycle Marker 1 to 9	Shift-Num 1 to Num 9
Record	Num *

Option	Key command
Retrospective MIDI Record	Shift-Num *
Rewind	Num -
Set Left Locator to Project Cursor Position	Ctrl/Cmd-Num 1
Set Locators to Selection Range	P
Set Marker 1	Ctrl/Cmd-1
Set Marker 2	Ctrl/Cmd-2
Set Marker 3 to 9	Ctrl/Cmd-Num 3 to 9 or Ctrl/Cmd- 3 to 9
Set Right Locator to Project Cursor Position	Ctrl/Cmd-Num 2
Start	Enter
Start/Stop	Space
Stop	Num 0
To Marker 1	Shift-1
To Marker 2	Shift-2
To Marker 3 to 9	Num 3 to 9 or Shift-3 to 9
Use External Synchronization	Alt-Shift-T
Use Metronome	C
Use Tempo Track	T

Window Zones

Option	Key command
Show/Hide Left Zone	Ctrl/Cmd-Alt-L; Alt-I
Show/Hide Right Zone	Ctrl/Cmd-Alt-R
Show/Hide Lower Zone	Ctrl/Cmd-Alt-E
Show/Hide Transport Zone	Ctrl/Cmd-Alt-T
Show Previous Tab	Ctrl/Cmd-Alt-Left Arrow

Option	Key command
Show Next Tab	Ctrl/Cmd-Alt-Right Arrow
Show Previous Page	Ctrl/Cmd-Alt-Shift-Left Arrow; Ctrl/Cmd-Alt-Shift-Up Arrow
Show Next Page	Ctrl/Cmd-Alt-Shift-Right Arrow; Ctrl/Cmd-Alt-Shift-Down Arrow
Show/Hide Info Line	Ctrl/Cmd--I
Show/Hide Overview	Alt--O

Windows category

Option	Key command
Inline: Key Commands	Shift-F4
Inline: Settings	Shift-F3
Inline: View Layout	Shift-F2

Workspaces category

Option	Key command
New	Ctrl/Cmd-Num 0
No Workspace	Alt-Num 0
Update Workspace	Alt-U
Workspace 1-9	Alt-Num 1-9
Workspace X	Ctrl/Cmd-Alt-Num 0

Zoom category

Option	Key command
Zoom Full	Shift-F
Zoom In	H
Zoom In Tracks	Ctrl/Cmd-Down Arrow
Zoom In Vertically	Shift-H

Key Commands
The default key commands

Option	Key command
Zoom Out	G
Zoom Out Tracks	Ctrl/Cmd-Up Arrow
Zoom Out Vertically	Shift-G
Zoom to Event	Shift-E
Zoom to Selection	Alt-S
Zoom Tracks Exclusive	Ctrl/Cmd-Alt-Down Arrow

File handling

Importing audio

In Cubase audio can be imported in a variety of different formats. For example, you can import tracks from audio CDs, or import audio files saved in different formats (compressed and uncompressed).

RELATED LINKS

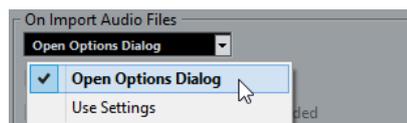
[Importing Media](#) on page 522

Audio file import options

When you are importing audio files, there are a number of options concerning how the files should be treated by Cubase:

- You can choose to copy the file into the Audio folder of the project and have the project make reference to the copied file rather than the original file.
This helps you keep your project “self-contained”.
- You can choose to split stereo and multi-channel files into a number of mono files.
- You can set all files in the project to the same sample rate and sample size (resolution).

Using the “On Import Audio Files” pop-up menu in the Preferences dialog (Editing–Audio page), you can define what Cubase does when importing an audio file. The available options are described in the following.



Open Options Dialog

An Options dialog appears when you import, allowing you to select whether you want to copy the files to the Audio folder and/or convert them to the project settings. Please note the following:

- When importing a single file of a format other than the project settings, you can specify which properties (sample rate and/or resolution) are changed.
- When importing multiple files at the same time, you can select to convert the imported files automatically if necessary, i. e. if the sample rate is different than the project’s or the resolution is lower than the project setting.

NOTE

When you import 5-channel interleaved files that do not have the speaker arrangement metadata (“BEXT”), Cubase always considers them as 5.0 format.

Use Settings

No Options dialog will appear when you import. Instead, you can select standard actions from the list below the pop-up menu that are performed automatically each time you import audio files:

Copy Files to Working Directory

If files are not already in the project's audio folder, they are copied there before being imported.

Convert and Copy to Project If Needed

If files are not already in the project's audio folder, they are copied there before being imported. Furthermore, if the files have a different sample rate or a lower resolution than the project settings, they are automatically converted.

Split channels/Split multi-channel files

Activate this option to split stereo or multi-channel audio files into a corresponding number of mono files – one for each channel. Note that if you use this option, the imported files are always copied to the Audio folder of the project's working directory.

If you import files using the Import option on the File menu, the split files are inserted into the project and into the Pool as separate mono tracks.

If you import the files using the Import Medium option on the Media menu, the split files are only inserted into the Pool.

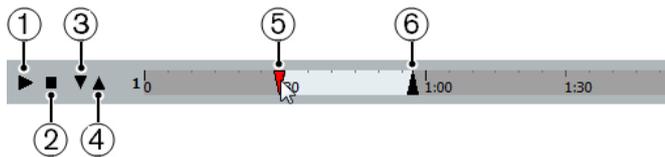
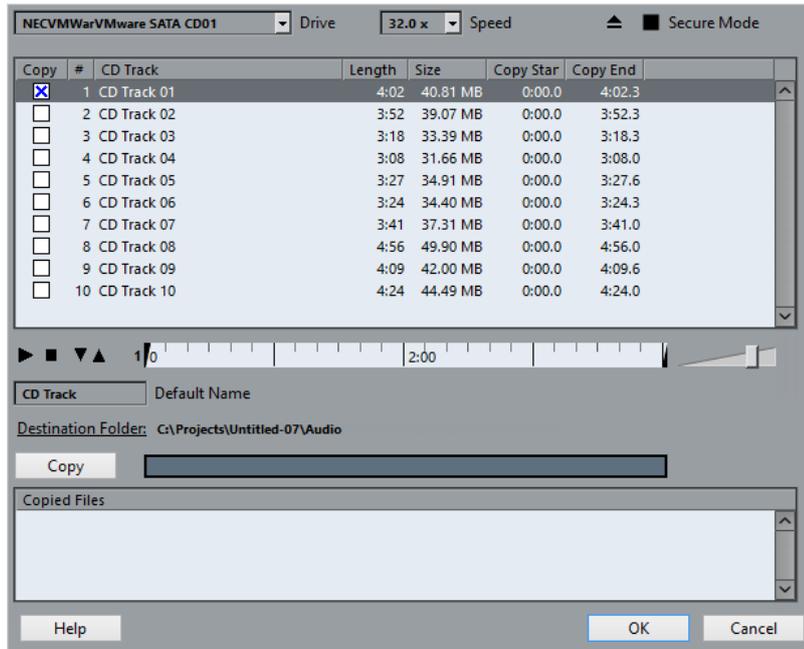
In all cases, the "Split File Name Format" pop-up menu lets you specify how the split files are named. This allows for compatibility with other products when exchanging audio files and avoids confusion if the source file contains no stereo or surround material, but poly-mono audio.

Importing audio CD tracks

You can import audio from audio CDs into Cubase projects in 2 ways:

- To import the CD tracks directly into project tracks, choose the "Audio CD..." option from the Import submenu of the File menu.
The imported audio CD track(s) are inserted on the selected audio track(s) at the project cursor position.
- To import the CD tracks into the Pool, select "Import Audio CD..." from the Media menu.
This might be the preferred method if you want to import several CD tracks in one go.

Selecting one of the Import Audio CD menu items brings up the following dialog:



1. Play
2. Stop
3. Play from Left Marker
4. Play to Right Marker
5. Start of selection handle
6. End of selection handle

To import one or more tracks, proceed as follows:

PROCEDURE

1. If you have more than one CD drive, select the correct one from the Drive pop-up menu at the top left.
On opening the CD, the program tries to retrieve the track names from CDDb (a CD database). If no connection to CDDb can be established or the CD track names are not found, you can manually change the generic track name in the Default Name field.
2. Windows only: Activate the "Secure Mode" option if you want to use a Secure Read mode. Use this if you encounter problems when trying to import an audio CD. Error checking and correction will be done during the process. Note that this mode will take more time.
3. In the Windows version, select the data transfer speed from the Speed pop-up menu. While you normally want to use the fastest possible speed, you may have to select a slower speed for flawless audio extraction.
4. Activate the Copy checkbox for every audio file you want to import. You can also select a copy section for every file, see below.
5. Click on the Copy button to create a local copy of the audio file(s) or section(s).
The copied files are listed at the bottom of the dialog. By default, imported audio CD tracks will be stored as Wave files (Windows) or AIFF files (Mac OS) in the Audio folder of the current project. To change the folder, click Destination Folder and select a different

folder from the dialog. During copying, the Copy button is labeled "Stop"; click it to stop the process.

6. Click OK to import the copied audio files into the project, or click Cancel to stop the import and discard the copied files.

If you import more than one audio file into project tracks, a dialog opens in which you have to choose whether to insert the tracks on one track or on different ones.

The new track(s) are displayed in the Project window. New audio clips are created and added to the Pool.

The columns in the "Import from Audio CD" dialog have the following functionality:

Column	Description
Copy	Activate the checkbox in this column for the track you want to copy/import. To activate more than one checkbox, click and drag over the checkboxes (or press Ctrl/Cmd or Shift and click).
#	This is the track number.
CD Track	When you import an audio CD track, the file is named according to this column. The names are pulled automatically from CDDB, if possible. You can rename a track by clicking in the CD Track column and typing a new name. You can also apply a generic name to all audio CD tracks if no name was available in CDDB.
Length	The length of the audio CD track in minutes and seconds.
Size	The file size of the audio CD track in MB.
Copy Start	You can copy a section of a track if you like. This indicates the start of the section to be copied in the track. By default, this is set to the start of the track (0.000) but you can adjust this on the copy selection ruler, see below.
Copy End	Indicates the end of the section to be copied in the track. By default, this is set to the end of the track but you can adjust this on the copy selection ruler, see below.

By default, complete tracks are selected.

- If you want to copy and import a section of an audio CD track only, select the track in the list and specify the start and end of the selection to be copied by dragging the handles in the copy selection ruler.

NOTE

Note that you can import sections of several audio CD tracks by selecting them in turn and adjusting the selection. The start and end settings for each track are displayed in the list.

- You can audition the selected audio CD track by clicking the Play button. The track will be played back from selection start to selection end (or until you click the Stop button).

- The Play from left Marker (down arrow) and Play to Right Marker (up arrow) buttons allow you to audition the start and end of the selection only.
The down arrow button will play a short snippet beginning at the start of the selection, while the up arrow button will play a snippet starting just before the end of the selection.
 - To open the CD drive, click on the Eject button at the top of the dialog.
-

Importing Audio from video files

While you can automatically extract the audio when importing a video file, it is also possible to import the audio from a video file without importing the video itself:

PROCEDURE

1. Open the File menu, open the Import submenu and select "Audio from Video File...".
 2. In the file dialog that opens, locate and select the video file and click Open.
The audio in the selected video file is extracted and converted to a Wave file in the project's Audio folder.
A new audio clip is created and added to the Pool. In the Project window, an event referencing the audio file is inserted on the selected track at the project cursor position. If no track was selected, a new track is created.
This works just like importing regular audio files.
-

RELATED LINKS

- [Extract Audio from Video](#) on page 933
- [Importing Video Files](#) on page 928

Importing ReCycle files

ReCycle by Propellerhead Software is a program designed especially for working with sampled loops. By "slicing" a loop and making separate samples of each beat, ReCycle makes it possible to match the tempo of a loop and edit the loop as if it was built of individual sounds. Cubase can import 2 file types created by ReCycle:

- REX files (export file format of the first versions of ReCycle, extension ".rex").
- REX 2 files (file format of ReCycle 2.0 and later, extension ".rx2").

IMPORTANT

For this to work, the REX Shared Library needs to be installed on your system.

PROCEDURE

1. Select an audio track and move the project cursor to where you want the imported file to start.
You probably want to import REX files to audio tracks that are set to musical time base, since this will allow you to change the tempo later on (having the imported REX file automatically adjust).
2. Select "Audio File..." from the Import submenu of the File menu.
3. On the file type pop-up menu in the file dialog, select REX File or REX 2 File.
4. Locate and select the file you want to import, and click Open.
The file is imported and automatically adjusted to the current Cubase tempo.

Unlike a regular audio file, the imported REX file will consist of several events, one for each “slice” in the loop. The events will automatically be placed in an audio part on the selected track and positioned so that the original internal timing of the loop is preserved.

5. If you now open the part in the Audio Part Editor, you can edit each slice separately by muting, moving and resizing events, adding effects and processing, etc.

You can also adjust the tempo and have the REX file automatically follow (provided that its track is set to a musical time base).

NOTE

You can achieve similar results by using Cubase’s own loop slicing features.

RELATED LINKS

[Slices](#) on page 452

Importing compressed audio files

Cubase can import several common audio compression formats. The procedure is the same as when importing any non-compressed audio file, with one important thing to note:

For most compressed file formats, Cubase creates a copy of the file and converts this to Wave format (Windows) or AIFF format (Mac OS) before importing it. The original compressed file will not be used in the project.

The imported file is placed in the designated project Audio folder.

IMPORTANT

The resulting Wave/AIFF file is several times larger than the original compressed file.

The following file types are supported:

FLAC files

FLAC is an open source format and stands for Free Lossless Audio Codec. Audio files in this format are typically 50 to 60 % smaller than regular Wave files. FLAC files are not converted to Wave files on import.

MPEG audio files

MPEG, which stands for Moving Picture Experts Group, is the name of a family of standards used for encoding audio-visual information (e. g. movies, video, music) in a digital compressed format.

Cubase can read 2 types of audio MPEG files: MPEG Layer 2 (*.mp2) and MPEG Layer 3 (*.mp3). Currently, mp3 is the most common of these formats, while the mp2 format is mostly used in broadcast applications.

Ogg Vorbis files

Ogg Vorbis is an open and patent-free format that offers very small audio files maintaining comparatively high audio quality. Ogg Vorbis files have the extension “.ogg”.

Windows Media Audio files (Windows only)

Windows Media Audio is an audio format developed by Microsoft, Inc. Due to advanced audio compression algorithms, Windows Media Audio files can be made very small, maintaining good audio quality. The files have the extension “.wma”.

RELATED LINKS

[Export Audio Mixdown](#) on page 890

Exporting and importing OMF files (Cubase Pro only)

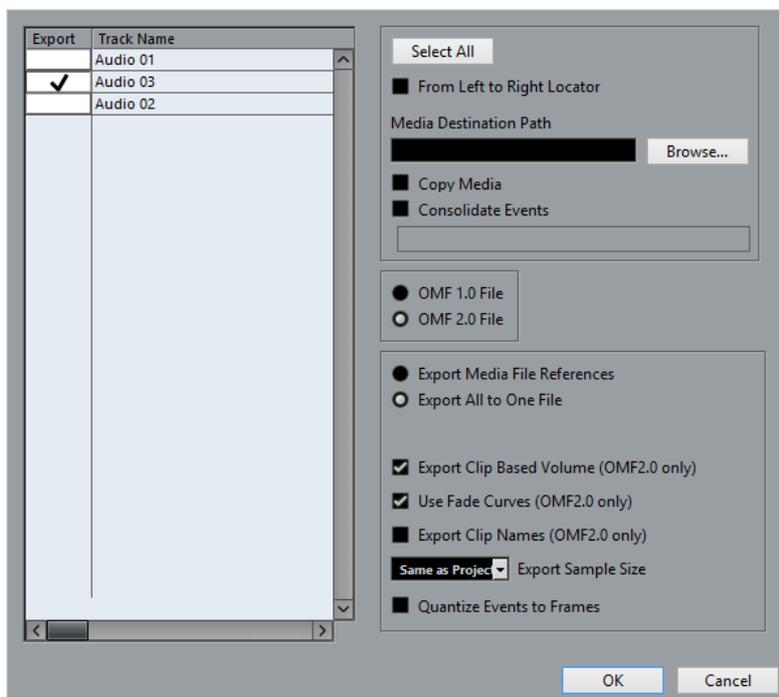
Open Media Framework Interchange (OMFI) is a platform independent file format intended for the transfer of digital media between different applications. Cubase can import and export OMF files (file extension “.omf”), allowing you to use Cubase in conjunction with other audio and video applications.

Exporting OMF files

When exporting tracks and files as OMF, you should consider setting up your project to use mono tracks and mono files, to allow compatibility with audio applications that provide limited support for interleaved audio files.

PROCEDURE

1. Open the File menu, open the Export submenu and select “OMF...”.
The Export Options dialog opens.



2. Use the track list to the left to select the tracks that you want to include in the exported file.
To select all tracks, click the “Select All” button. Normally, the whole project is included – to export the range between the locators only, activate “From Left to Right Locator”.

When referencing media files (see below), you can set the referenced output path by entering it in the “Media Destination Path” field or by clicking on “Browser...” and choosing it in the file dialog that opens.

All file references will be set to this path. You can create references to media destinations that do not exist on the system you are working with, making it easy to prepare files for use in projects on another system or in a network environment.

3. If you want to create copies of all the media files, choose the “Copy Media” option.
By default, the copied audio files are placed in a subdirectory in the export destination folder. To specify a different location for the copied files, use the “Media Destination Path” field.
4. If you want to copy only the portions of audio files that are used in the project, activate “Consolidate Events”.
You can also define handle lengths in milliseconds to include audio outside each event boundary for later fine tuning. If you do not have any handles when consolidating audio files, you will not be able to adjust fades or edit points when the project is imported in another application.
5. Select “1.0 File” or “2.0 File”, depending on which OMF version is supported by the application in which you plan to import the file.
Select whether you want to include all audio data in the OMF file (“Export All to One File”) or use references only (“Export Media File References”).
If you choose “Export All to One File”, the OMF file will be totally “self-contained”, but possibly very large. If you choose “Export Media File References”, the file will be small, but the referenced audio files must be available for the receiving application.
6. If you selected the “2.0 File” option above, you can choose whether to include the volume settings and fades for the events (as set up with the event volume and fade handles) as well as the clip names – to include these in the OMF file, activate “Export Clip Based Volume”, “Use Fade Curves” and/or “Export Clip Names”.
7. Specify a sample size (resolution) for the exported files (or use the current project settings).
8. If you activate “Quantize Events to Frames”, the event positions in the exported file will be moved to exact frames.
9. Click OK, and specify a name and location in the file dialog that opens.
The exported OMF file will contain (or reference) all audio files that are played in the project (including fade and edit files). It will not include unused audio files referenced in the Pool, or any MIDI data. Video files are not included.

Importing OMF files

PROCEDURE

1. Open the File menu, open the Import submenu and select “OMF...”.
2. In the file dialog that opens, locate the OMF file and click Open.
If there is already an open project, a dialog opens in which you can select whether a new project is created for the file.
If you select “No”, the OMF file will be imported into the current project.
3. If you choose to create a new project, a file dialog opens in which you can select the project folder.
Select an existing project folder or create a new one.
4. The Import Options dialog opens, allowing you to choose a track for the import.
 - Activating the “Import all media files” option allows you to import media that is not referenced by events.

- Activating the “Import Clip Gain as Automation” option imports volume automation and envelopes of the Volume Automation Track of each track.
- “Import at Timecode Position” will insert the elements contained in the OMF file at their original timecode positions.
This is useful when you want to position every imported element at its exact timecode position, i. e. as it was saved in the OMF file. This way, the elements will end up at their correct time positions even when Cubase uses a different frame rate than the OMF file. This is usually required in a picture-related context.
- “Import at Absolute Time” will insert the elements contained in the OMF file starting at the timecode position saved in the file and keeping the relative distances between the elements.
This is required when the relative positioning of the elements inside the OMF file needs to be maintained after importing it into the Cubase timeline (even if Cubase is set to a different frame rate than the OMF file). This is usually required in music contexts, where the timing between objects has highest priority.
- If the OMF file contains video event information, you are asked whether you want to create Markers at the start position of the video events.
This allows you to manually import the video files, using the Markers as position references.

A new, untitled project is created (or tracks are added to the existing project), containing the audio events of the imported OMF file.

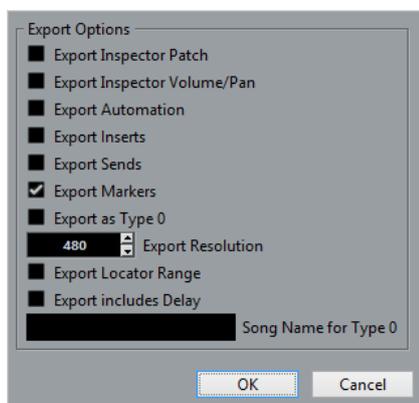
Exporting and importing standard MIDI files

Cubase can import and export standard MIDI files, which makes it possible to transfer MIDI material to and from virtually any MIDI application on any platform. When you import and export MIDI files, you can also specify whether certain settings associated with the tracks are included in the files (automation tracks, volume and pan settings, etc.).

Exporting MIDI files

To export your MIDI tracks as a standard MIDI file, open the File menu and select “MIDI File...” from the Export submenu. A regular file dialog opens, allowing you to specify a location and name for the file.

When you have specified a location and a name for the file, click “Save”. The Export Options dialog opens, allowing you to specify a number of options for the file, e. g. what is included in the file, its type and its resolution (see below for a description of the options).



You will also find most of these settings in the Preferences dialog (MIDI-MIDI File page). If you set these up in the Preferences dialog, you only need to click OK in the Export Options dialog to proceed.

The dialog contains the following options:

Option	Description
Export Inspector Patch	If this option is activated, the MIDI patch settings in the Inspector – Bank Select and Program Select (used for selecting sounds in the connected MIDI instrument) are included as MIDI Bank Select and Program Change events in the MIDI file.
Export Inspector Volume/Pan	If this option is activated, Volume and Pan settings made in the Inspector are included as MIDI Volume and Pan events in the MIDI file.
Export Automation	<p>If this option is activated, the automation data (as heard during playback) are converted to MIDI controller events and included in the MIDI file. This also includes automation recorded with the MIDI Control plug-in (see the separate PDF document Plug-in Reference).</p> <p>Note that if a continuous controller (e. g. CC7) has been recorded but the Read button is deactivated for the automation track (i. e. the automation is effectively switched off for this parameter), only the part data for this controller will be exported.</p> <p>If this option is deactivated and the Automation Read button is activated, no Continuous Controllers are exported. If the Read button is deactivated, the Controller data of the MIDI part are exported (these will now be handled like “regular” part data).</p> <p>In most cases it is recommended to activate this option.</p>
Export Inserts	If this option is activated and you are using MIDI modifiers or any MIDI plug-ins as insert effects, the modifications to the original MIDI notes that occur as a result of the effect(s) will be included in the MIDI file. A MIDI delay, for example, will produce a number of repeats to a MIDI note by actually adding additional, “echoing” notes at rhythmic intervals – these notes will be included in the MIDI file if the option is activated.
Export Sends	If this option is activated and you are using any MIDI plug-ins as send effects, the modifications to the original MIDI notes

Option	Description
	that occur as a result of the effect(s) will be included in the MIDI file.
Export Markers	If this option is activated, any markers you have added will be included in the MIDI file as standard MIDI file marker events.
Export as Type 0	If this option is activated, the MIDI file will be of type 0 (all data on a single track, but on different MIDI channels). If you do not activate this option, the MIDI file will be of Type 1 (data on separate tracks). Which type to choose depends on what you want to do with the MIDI file (in which application or sequencer it should be used, etc.).
Export Resolution	You can specify a MIDI resolution between 24 and 960 for the MIDI file. The resolution is the number of pulses, or ticks, per quarter note (PPQ) and determines the precision with which you will be able to view and edit the MIDI data. The higher the resolution, the higher the precision. Choose the resolution depending on the application or sequencer with which the MIDI file will be used, though, since certain applications and sequencers may not be able to handle certain resolutions.
Export Locator Range	If this option is activated, only the range between the locators will be exported.
Export includes Delay	If this option is activated, the delay of the MIDI track will be included in the MIDI file.
Song name for Type 0	You can use this text field to change the name of the MIDI file as displayed when loading this file in a keyboard.

NOTE

The MIDI file will include the tempo information of the project (i. e. it will include the tempo and time signature events of the Tempo Track Editor or, if the tempo track is deactivated on the Transport panel, the current tempo and time signature).

NOTE

Inspector settings other than those specified in the Export options are not included in the MIDI file! To include these, you need to convert the settings to “real” MIDI events and properties by using the Merge MIDI in Loop function for each track.

RELATED LINKS

[Automation](#) on page 578

[Markers](#) on page 285

[MIDI Track Parameters](#) on page 638

[Merge MIDI in Loop](#) on page 662

[Export Options](#) on page 1013

Importing MIDI files

To import a MIDI file from disk, proceed as follows:

PROCEDURE

1. Select "MIDI File..." from the Import submenu of the File menu.
2. If there is already an open project, a dialog opens in which you can select whether a new project is created for the file.
If you select "No", the MIDI file will be imported into the current project.
3. Locate and select the MIDI file in the file dialog that opens and click Open.
If you choose to create a new project, select the project folder.
Select an existing project folder or create a new one.

RESULT

The MIDI file is imported. The result depends on the contents of the MIDI file and the Import Options settings in the Preferences dialog (MIDI-MIDI File page).

It is also possible to import a MIDI file from disk by dragging and dropping it from the File Explorer/Mac OS Finder into the Project window. The Import Options apply as well.

RELATED LINKS

[Import Options](#) on page 1015

[Markers](#) on page 285

Support for the Yamaha XF data format

Cubase supports the Yamaha XF format. XF is an extension of the standard MIDI file format that allows you to save song-specific data with a MIDI file of type 0.

When importing a MIDI file containing XF data, this data is placed in parts on separate tracks called "XF Data", "Chord Data", or "SysEx Data". You can edit such a part in the List Editor (e. g. to add or change lyrics).

IMPORTANT

Do not change the order of events within the XF data or the event data itself, unless you have a lot of experience with XF data.

Cubase can also export XF data as part of a MIDI file of type 0. If you do not want to export the XF data together with the MIDI data, mute or delete the tracks containing the XF data.

Exporting and importing MIDI loops

Cubase allows you to import MIDI loops (file extension ".midiloop") and to save instrument parts as MIDI loops. MIDI loops are handy, as they contain not only MIDI notes and controllers, but also the number of voices, the associated VST instrument and instrument track preset settings.

RELATED LINKS

[VST Instruments](#) on page 598

Exporting and importing track archives (Cubase Pro only)

You can export Cubase tracks (audio, FX, group, instrument, MIDI, and video) as track archives for import into other Cubase (or Nuendo) projects. All the information associated with the tracks will be exported (channel settings, automation tracks, parts and events, etc.). If you select the “Copy” option (see below), a separate “media” folder will be created, containing copies of all referenced audio files.

NOTE

Project-specific settings (such as tempo) are not part of the exported track archives.

RELATED LINKS

[Track Presets](#) on page 177

Exporting tracks as track archives

PROCEDURE

1. Select the tracks you want to export.
 2. Open the File menu, open the Export submenu and choose “Selected Tracks...”.
 3. When exporting audio or video tracks, you are prompted to choose between 2 options:
 - Click Copy to include copies of the media files in the export.
A file dialog opens in which you can choose an existing empty folder or create a new folder for saving the track archive (as XML file) and its media subfolder, which will contain any associated audio or video files. Click OK to save the track archive.
 - Click Reference to include merely a reference to the files in the export.
A file dialog opens in which you can choose an existing folder for saving the track archive (as single XML file).
 4. Enter a name for the track archive and click OK.
-

Importing Tracks from a Track Archive

You can import individual tracks from existing projects into your current project by means of track archives. The import options allow you to import tracks either as new tracks or as new TrackVersions of existing tracks.

Track archives are saved as XML files.

PROCEDURE

1. Select **File > Import > Track Archive**.
2. In the file dialog, select the XML file containing the required tracks and click **Open**.
3. In the **Import** column of the Import Options dialog, select the tracks that you want to import or click **Select All**.
4. In the **Destination** column, select one of the following options for each track that you want to import:
 - To import a track as a new track, select **New Track**.
 - To import a track as a new TrackVersion of an existing track, select a track from the track list.
5. Optional: Activate **Copy to Active Project Folder** if you want to import the media files into your project folder.

- Optional: Activate **Perform Sample Rate Conversion** if the sample rate of the imported media files is different from the sample rate of your project.
- Click **OK**.

RESULT

The tracks are imported into your active project.

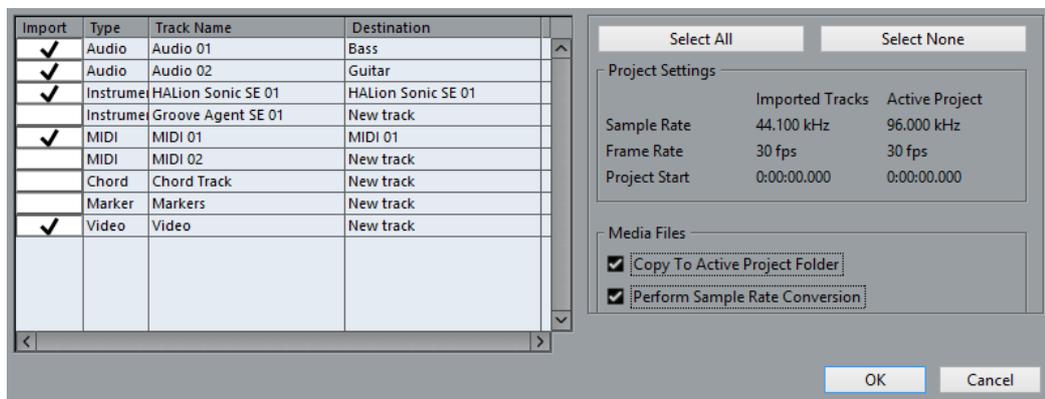
RELATED LINKS

[Track Archive Import Options](#) on page 969

[TrackVersions](#) on page 170

Track Archive Import Options

The **Import Options** dialog provides information about the tracks that are available for import, and offers several import options.



Import

Allows you to select the tracks that you want to import into your project.

Type

Shows the track types of the available tracks.

Track Name

Shows the track names of the available tracks.

Destination

Allows you to select if a track is imported into your active project as a new track, or as a new TrackVersion of an existing track.

- If a track is imported as a new track, this new track contains all events and mixer settings of the imported track. The following mixer settings are not imported: the channel visibility and zone settings, the record-enable status, the send destination, and the device panel settings. The routing settings are imported only if the active project contains the same routing sources and destinations as the imported track.
- If a track is imported as a new TrackVersion, this new track version contains all events of the imported track. The mixer settings of your active project are not changed.

NOTE

Imported track versions must be of the same type as the track in your active project.

To select a track as destination for the imported track, click on the corresponding list entry. A pop-up menu opens, allowing you to select the destination track, to browse through the folders of your active project, to expand or collapse the folder tree, and to search for track names.

Select All

Selects all tracks.

Select None

Deselects all tracks.

Project Settings

Shows the sample rate, the frame rate, and the project start time for both the imported tracks and your active project.

NOTE

Imported tracks may contain media files with a sample rate that differs from the sample rate of your destination project. Files with a sample rate different from the one that is used in the destination project play back at the wrong speed and pitch.

Copy to Active Project Folder

If this option is activated, the media files of the imported tracks are copied to your active project folder. If this option is deactivated, the media file path of the original project is referenced.

Perform Sample Rate Conversion

If this option is activated, the sample rate of the imported tracks is converted to the sample rate of your active project.

NOTE

This option is available only if the sample rates of the imported tracks and your active project differ and **Copy To Active Project Folder** is activated.

RELATED LINKS

[TrackVersions](#) on page 170

Track Import from Projects

Audio, instrument, MIDI, chord, marker, and video tracks can be imported directly from other Nuendo or Cubase projects. You can import audio, instrument, and MIDI tracks either as new tracks or as new TrackVersions of existing tracks.

Depending on the track type that you want to import, the following applies:

Audio, instrument, and MIDI tracks

- If you import a track as a new track, a new track is created in your project. This new track contains all events, channel settings, and TrackVersions of the imported track.
- If you import a track as a new TrackVersion of an existing track, a new track version of the existing track is created. This new TrackVersion gets the name of the imported track and contains all events of the imported track. The channel settings of the existing track remain unchanged. If the imported track contains more than one TrackVersion, only its active TrackVersion is imported.

Marker tracks

Cubase Pro only: A project can contain 10 marker tracks. If your project already contains 10 marker tracks, you cannot import a marker track from another project. In this case, you must remove an existing marker track first.

NOTE

Cubase Pro only: Projects from other Steinberg applications can contain more than 10 marker tracks. If you import marker tracks from these projects, only the first 10 selected marker tracks in the **Import Options** dialog are imported to your project.

Cubase Artist only: A project can contain only one marker track. If your project already contains a marker track, it is replaced by the imported marker track.

Chord tracks

A project can contain only one chord track. If your project already contains a chord track, it is replaced by the imported chord track.

Video tracks

A project can contain only one video track. If your project already contains a video track, you cannot import a video track from another project. In this case, you must remove the existing video track first.

NOTE

Projects from other Steinberg applications can contain more than one video track. If you import video tracks from these projects, only the first selected video track in the **Import Options** dialog is imported to your project.

Importing Tracks from a Project

You can import individual audio, instrument, MIDI, chord, marker, and video tracks from other Nuendo or Cubase projects.

PROCEDURE

1. Select **File > Import > Tracks from Project**.
 2. In the file dialog, select a project file and click **Open**.
 3. In the **Import** column of the Import Options dialog, select the tracks that you want to import or click **Select All**.
 4. In the **Destination** column, select one of the following options for each track that you want to import:
 - To import a track as a new track, select **New Track**.
 - To import a track as a new TrackVersion of an existing track, select a track from the track list.
 5. Optional: Activate **Copy to Active Project Folder** if you want to import the media files into your project folder.
 6. Optional: Activate **Perform Sample Rate Conversion** if the sample rate of the imported media files is different from the sample rate of your project.
 7. Click **OK**.
-

RESULT

The tracks are imported in your active project.

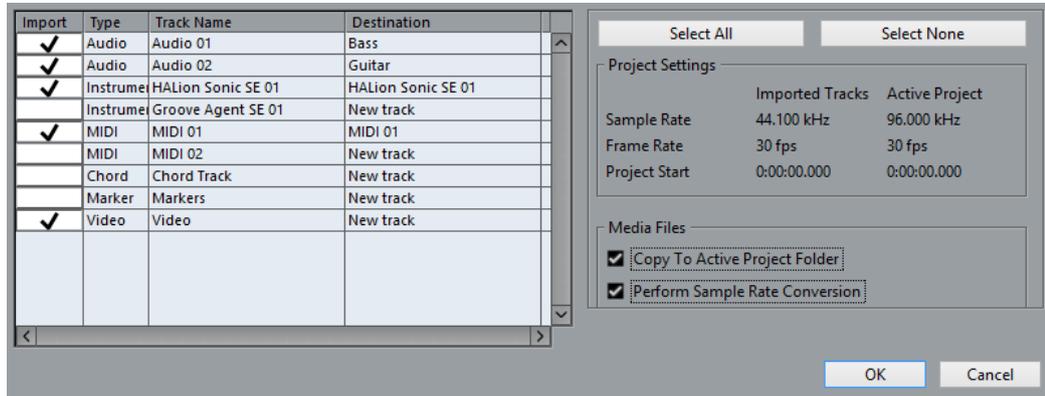
RELATED LINKS

[Import Options for Tracks from a Project](#) on page 972

[TrackVersions](#) on page 170

Import Options for Tracks from a Project

The **Import Options** dialog provides information about the tracks that are available for import, and offers several import options.



Import

Allows you to select the tracks that you want to import into your project.

Type

Shows the track types of the available tracks.

Track Name

Shows the track names of the available tracks.

Destination

Allows you to select if a track is imported into your active project as a new track, or as a new TrackVersion of an existing track.

- If a track is imported as a new track, this new track contains all events and mixer settings of the imported track. The following mixer settings are not imported: the channel visibility and zone settings, the record-enable status, the send destination, and the device panel settings. The routing settings are imported only if the active project contains the same routing sources and destinations as the imported track.
- If a track is imported as a new TrackVersion, this new track version contains all events of the imported track. The mixer settings of your active project are not changed.

NOTE

Imported track versions must be of the same type as the track in your active project.

To select a track as destination for the imported track, click on the corresponding list entry. A pop-up menu opens, allowing you to select the destination track, to browse through the folders of your active project, to expand or collapse the folder tree, and to search for track names.

Select All

Selects all tracks.

Select None

Deselects all tracks.

Project Settings

Shows the sample rate, the frame rate, and the project start time for both the imported tracks and your active project.

NOTE

Imported tracks may contain media files with a sample rate that differs from the sample rate of your destination project. Files with a sample rate different from the one that is used in the destination project play back at the wrong speed and pitch.

Copy to Active Project Folder

If this option is activated, the media files of the imported tracks are copied to your active project folder. If this option is deactivated, the media file path of the original project is referenced.

Perform Sample Rate Conversion

If this option is activated, the sample rate of the imported tracks is converted to the sample rate of your active project.

NOTE

This option is available only if the sample rates of the imported tracks and your active project differ and **Copy To Active Project Folder** is activated.

RELATED LINKS

[TrackVersions](#) on page 170

Customizing

Workspaces

Workspaces in Cubase allow you to organize windows and specific dialogs for your common work routines.

A workspace saves the size, position, and layout or setting of important windows and dialogs, such as the **Project** window, **MixConsole**, or **Transport** panel. You can define several workspaces. This allows you to quickly switch between different working modes, either through the **Workspaces** menu or by using key commands.

You can define different workspace types that are either available for all projects on your computer or specific for one project. However, when you open a project, its last saved view is opened by default. A view is the window layout and setting that you defined for your project. The last saved view can either be a workspace view or a view that you saved without having any workspace selected. When you open an external project, the last used view on your computer is used by default.

The **Workspaces Organizer** and the **Workspaces** menu allow you to create and modify workspaces.

NOTE

- You can also work without workspaces. In this case, the last used view of the former project will be used when you create a new project.
- In the **Preferences** dialog on the **General** page, you can select which view is used when you open a project.

RELATED LINKS

[Open Projects in Last Used View](#) on page 1011

Workspace Types

You can create different workspace types.

Global workspace

Allows you to save a specific layout of dialogs and windows for all projects on your computer. Global workspaces are indicated by the letter G on your **Workspaces** menu.

Project workspace

Allows you to save a specific layout of dialogs and windows that is saved with your current project. This allows you to open your project layout on other computers. Project workspaces are indicated by the letter P on your **Workspaces** menu.

Workspace Templates

Cubase provides sample templates that you can use as a starting point for your own workspaces.

The templates are made for screens with a resolution of 1280x800 px (minimal) or for screens with a resolution of 1920x1080 px (HD). You can change these templates according to your needs.

IMPORTANT

- Deleting and overwriting templates cannot be undone.
- If you have already used global workspaces in earlier Cubase versions, the sample templates are not installed.

The following workspace templates are provided on the **Workspaces** menu:

Project (minimal)

Displays the **Project** window with minimal resolution.

Project + MixConsole (minimal)

Displays the **Project** window and **MixConsole** with minimal resolution.

Project (HD)

Displays the **Project** window with HD resolution.

Project + MixConsole + Channel Settings (HD)

Displays the **Project** window, **MixConsole**, and **Channel Settings** window with HD resolution.

NOTE

To see the **Channel Settings** window, you must select an audio, MIDI, instrument, FX channel, or group channel track before you select the template.

Project + MixConsole + Racks (HD)

Displays the **Project** window, **MixConsole**, and **Racks** with HD resolution.

Workspaces for External Projects

You can determine the view of external projects when you open them in Cubase.

When you open external projects, which are projects that have been created on other computers, the window and dialog settings that you last used on your computer are applied by default. This can either be the last used view that was saved on your computer or one of your specified global workspaces.

If you want to open the original layout setting of a project, you have the following options:

- Select the project's original layout from the project workspaces on the **Workspaces** menu or in the **Workspace Organizer**.
- In the **Preferences** dialog on the **General** page, select **Never** from the **Open Projects in Last Used View** menu. This opens all external projects using their original layout. However, this may lead to a modification of your custom layout.

To return to the view that you last saved without any workspace assigned, select **No Workspace** on the **Workspaces** menu.

RELATED LINKS

[Workspaces Organizer](#) on page 976

[Open Projects in Last Used View](#) on page 1011

Creating Workspaces

To save your current dialog and window setting for future use, you can create a new workspace.

PROCEDURE

1. Select **Workspaces > Add Workspace**.
2. In the **Name** field of the **New Workspace** dialog, enter a workspace name.
3. Select the type of workspace that you want to create.
 - **Global Workspace**
 - **Project Workspace**
4. Click **OK**.

RESULT

The workspace is saved and added to the **Workspaces** menu.

Editing Workspaces

You can modify your created workspaces.

NOTE

To change a global workspace to a project workspace and vice versa, you must save it as a different workspace type.

PROCEDURE

1. On the **Workspaces** menu, select the workspace that you want to modify.
2. Make your changes as required.
3. On the **Workspaces** menu, select one of the following:
 - To update your current workspace, click **Update Workspace**.
 - To save your workspace as a different workspace or workspace type, click **Add Workspace**.

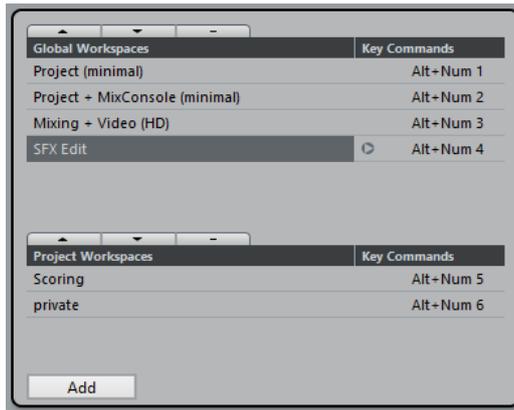
RELATED LINKS

[Creating Workspaces](#) on page 976

Workspaces Organizer

The **Workspaces Organizer** allows you to manage the existing workspaces.

To open the **Workspaces Organizer**, click **Workspaces > Organize**.



The **Workspaces Organizer** displays the global workspaces and the project workspaces in separate lists. Every workspace has an assigned key command that lets you switch views quickly. Moving or deleting workspaces within the lists changes the key command assignments. When you change the position of a workspace, the key command assignments remain in their original list position. You can click a key command of a selected workspace to open the respective key command assignment in the **Workspace** category of the **Key Commands** dialog.

To organize your workspace, you have the following options:

Move Up

Moves up a workspace by one position.

Move Down

Moves down a workspace by one position.

Delete

Deletes a selected workspace.

Add

Allows you to create a new workspace using the **New Workspace** dialog.

NOTE

- You can also click and drag a workspace to another position within a list.
- You can move workspaces only within a list. For a global workspace to become a project workspace and vice versa, you must save it as a different type of workspace.
- To rename a workspace, you can double-click the workspace name.

RELATED LINKS

[Workspaces category](#) on page 954

Using the Setup options

You can customize the appearance of the following elements:

- Transport panel
- Info line
- Toolbars
- Inspector

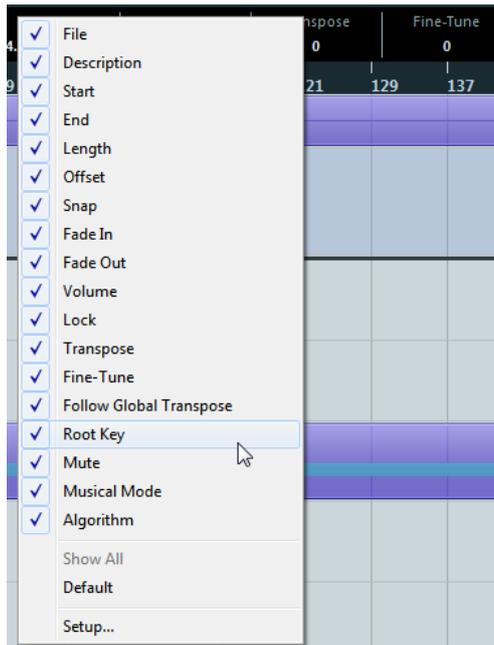
The setup context menus

If you right-click the Transport panel, the toolbars, the info lines, or the Inspector, the respective setup context menu opens.

The following general options are available on the setup context menus:

- “Show All” makes all items visible.
- “Default” resets the interface to the default setting.
- “Setup...” opens the Setup dialog, see below.

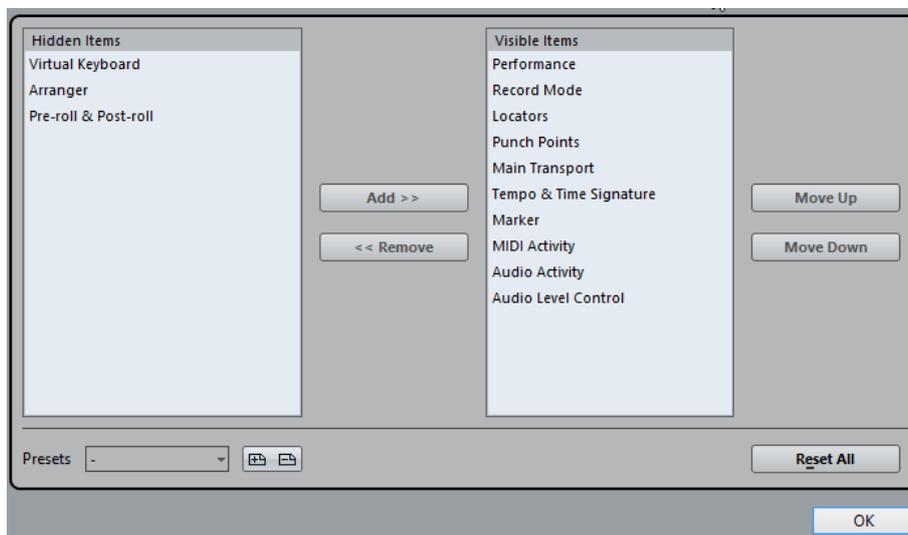
If presets are available, they can be selected on the lower half of the menu.



The info line setup context menu

The Setup dialogs

If you select “Setup...” from the setup context menus, the Setup dialog opens. This allows you to specify which elements are visible/hidden and to set the order of the elements. You can also save and recall setup presets in this dialog.



The dialog is divided into two sections. The left section displays the visible items and the right section displays the hidden items.

- You can change the current show/hide status by selecting items in one section and then use the arrow buttons in the middle of the dialog to move them to the other section. Changes are applied directly.
- By selecting items in the “Visible Items” list and using the Move Up and Move Down buttons, you can reorder the items list. Changes are applied directly. To undo all changes and revert to the standard layout, select “Default” on the setup context menu.
- If you click the Save button (disk icon) in the Presets section, a dialog opens, allowing you to name the current configuration and save it as a preset.
- To remove a preset, select it on the presets pop-up menu and click the trash icon.
- Saved configurations are available for selection from the Presets pop-up menu in the Setup dialog or directly from the setup context menu.

Appearance

In the Preferences dialog, the appearance of Cubase can be changed on the Appearance (Colors) and on the Metering (Appearance) page.

The following subpages are available on the Appearance–Colors page:

- **General**
Allows you to adjust the colors for the general interface of the program.
- **Track Type Defaults**
Allows you to adjust the colors for the different track types.
- **Project**
Allows you to adjust the colors in the Project window.
- **Editors**
Allows you to adjust the colors in the editors.
- **Rulers**
Allows you to adjust the colors in the ruler.
- **MixConsole Faders**
Allows you to adjust the colors for the level faders of the channel types in the MixConsole.
- **MixConsole Racks**
Allows you to adjust the colors for the racks in the MixConsole.
- **MixConsole Channel Strip**
Allows you to adjust the colors for the channel strips in the MixConsole.

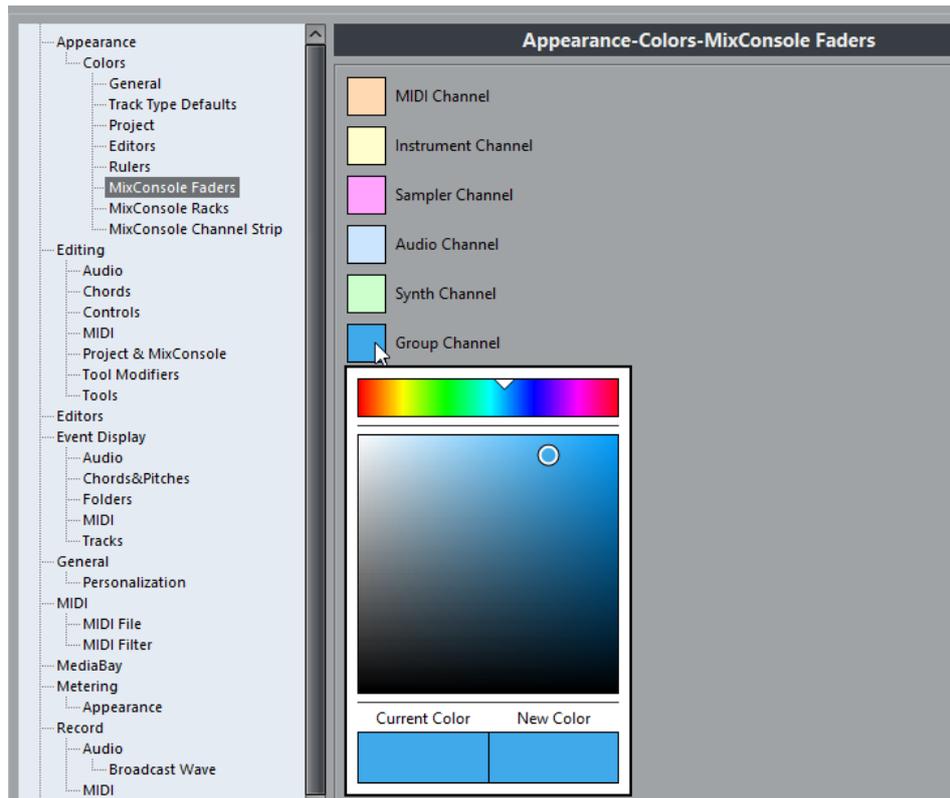
Appearance–Colors

The Appearance–Colors page features several subpages that allow you to change the color of the Cubase desktop, the track types, the Project, Editor elements, and MixConsole elements.

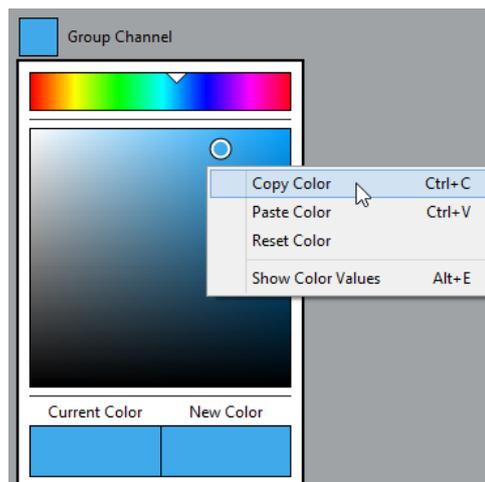
To change a color, proceed as follows:

PROCEDURE

1. Select a subpage and click the color field of the element to which you want to assign a new color.
A color selector pane opens.



2. Use the tools in the color selector pane to select a new color.
The current and the new color are shown at the bottom of the pane.
 3. Click outside the color selector pane to confirm your settings and apply your changes.
Note that you must restart the application for some changes to take effect.
- To copy a color and paste it on another element, even on another subpage, open the context menu in the color selector pane and select "Copy Color" and "Paste Color".
You can also copy colors on the same subpage using drag and drop.

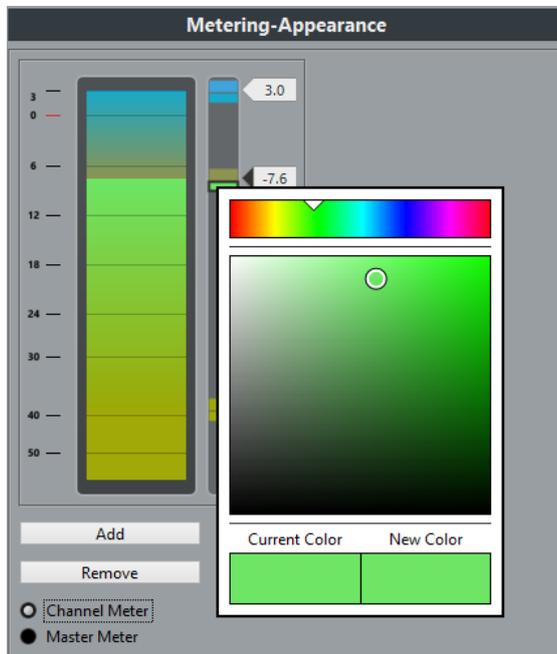


- To edit the colors numerically, open the context menu in the color selector pane, and select "Show Color Values".
- To select any color in Cubase as new color, open the color selector pane, hold down **Alt**, and click anywhere in the application.

The selected color is displayed in the “New Color” field.

Metering–Appearance

Cubase allows for precise color assignment of level meter values. On the Metering–Appearance page you can specify colors for quick identification of what levels are being reached.



You can adjust the colors for the Channel Meter or the Master Meter. For the Master Meter you can only make changes for the Digital Scale scaling mode. Changes take effect when you click Apply or OK.

To adjust the levels and colors, activate the Channel Meter or Master Meter option and proceed as follows:

- To specify the level for a color change, double-click a handle to the right of the meter scale and enter the level (dB) value.
Note that for dB values less than zero, you must add a minus sign before the entered number.
You can also click a handle and drag it to a specific level. Press **Shift** for more accurate positioning. Alternatively, you can nudge with the **Up Arrow/Down Arrow** keys. Press **Shift** for faster positioning.
- To assign a color, click the upper or lower part of a handle so that a frame is shown, and use the color selector pane to select a color (see above).
Selecting the same color for the upper and lower part of the handle results in a meter that changes its colors gradually, while separate colors indicate level changes even more precisely.
- To add more color handles, click the Add button, or **Alt**-click at a level position to the right of the meter scale. Each new handle is automatically associated with a default color.
- To remove a handle, select the handle and click the Remove button, or **Ctrl/Cmd**-click the handle.

Applying colors in the Project window

You can use color scheming for an easier overview of tracks and events in the Project window. Colors can be applied individually to tracks and events/parts. If you color a track, the corresponding events and parts are displayed in the same color. However, you can also color events and parts differently, “overriding” the applied track color.

In the following sections you will learn how to set up preferences to color tracks automatically, how to color parts or events manually, how to determine whether you want to color the events themselves or their background, and how to customize the color palette for selecting colors.

Colorize Track Controls

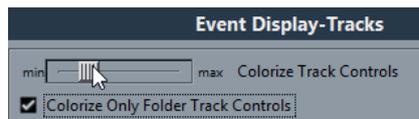
In the Preferences dialog (Event Display–Tracks page), you can find the “Colorize Track Controls” slider that allows you to apply the track color to the track controls.

Colorize Folder Track Controls Only

You can restrict the effect of the **Colorize Track Control** function to folder tracks only. This is useful in projects with a large number of tracks and folder tracks.

PROCEDURE

1. Select **File > Preferences > Event Display > Tracks**.
2. Drag the **Colorize Track Controls** slider to the right.



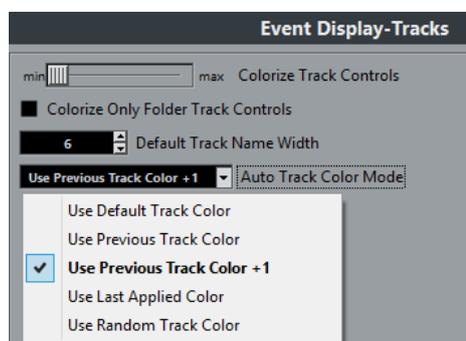
3. Activate **Colorize Only Folder Track Controls**.
4. Click **OK**.
5. In the track list, select the folder track that you want to colorize.
6. On the **Project** window toolbar, select the **Color Tool** and click again to select a color.

RESULT

Only the folder track controls are colorized.

Applying track colors automatically

In the Preferences dialog (Event Display–Tracks page), you can find the “Auto Track Color Mode” option.



This offers you several options for automatically assigning colors to tracks that are added to the project. The following options are available:

Use Default Track Color

The default color (gray) is assigned.

Use Previous Track Color

Analyzes the color of the selected track and uses the same color for the new track.

Use Previous Track Color +1

Analyzes the color of the selected track and uses the color that comes next in the color palette for the new track.

Use Last Applied Color

Uses the color that is selected in the Select Colors pop-up menu.

Use Random Track Color

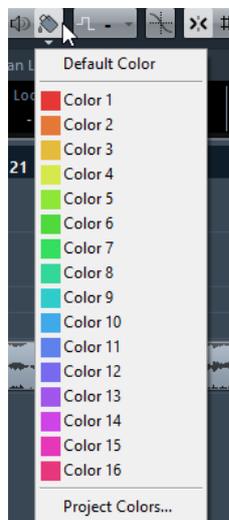
Uses the color palette as a basis to assign track colors randomly.

Coloring Tracks, Parts, or Events Manually

The **Color** tool on the **Project** window toolbar allows you to color each track, part, or event individually.

PROCEDURE

1. In the **Project** window, do one of the following:
 - To change the color of an event or part, select it.
 - To change the color of a track, select the track and deselect all its events or parts.
2. On the toolbar, select the **Color** tool, click again, and select a color from the pop-up menu.



RESULT

The color is applied to the selected item. If you change the color of a track, the new color is used for all events on the track and for the corresponding channel in the **MixConsole**.

NOTE

If you assign a different color to individual parts or events, they no longer follow color changes of the track.

Resetting the Default Color

You can reset the color of a track, part, or event to the default color.

PROCEDURE

1. In the **Project** window, select the event or part that you want to reset to the default color.
 2. On the toolbar, select the **Color** tool, click again, and select **Default Color** from the pop-up menu.
-

Project Colors Dialog

The **Project Colors** dialog allows you to set up a different set of colors for items in the **Project** window.

- To open the **Project Colors** dialog, select the **Color** tool on the **Project** window toolbar. Click again to open a pop-up menu and select **Project Colors**.



Color fields

Click a field to open a color selector pane that allows you to specify a new color.

Click **Options** for the following options.

Append New Color

Adds a new color button at the bottom of the color list.

Insert New Color before Selection

Adds a new color button above the selected color button.

Remove Selected Color

Removes the selected color.

Reset Selected Color

Resets the selected color to the factory settings.

Increase/Reduce Intensity of all Colors

Increases or reduces the intensity of all colors.

Increase/Reduce Brightness of all Colors

Increases or reduces the brightness of all colors.

Save Current Set as Program Defaults

Saves the current set of colors as default.

Load Program Defaults to Current Set

Applies the default set of colors.

Reset Current Set to Factory Settings

Returns to the standard color palette.

Adding and editing individual colors

In the Project Colors dialog, you can fully customize the color palette. To add new colors to the color palette, proceed as follows:

PROCEDURE

1. Add a new color by clicking the Insert New Color button.
2. In the Project Colors section, click the newly created color field to activate the new color for editing.
3. Use the Standard Colors or Modify Color sections to specify a new color.
To do this, pick a different color from the color palette, drag the cursor in the color circle, move the handle in the color meter, or enter new RGB values as well as values for hue, saturation, and luminosity manually.
4. Click the Apply button.
The color setting is applied to the selected color field in the Project Colors section.

NOTE

Every color in the Project Colors section can be edited this way.

Setting intensity and brightness

To increase or decrease the intensity and the brightness of all colors, use the corresponding buttons in the Project Colors section.



Increase/decrease intensity for all colors



Increase/decrease brightness for all colors

Where are the settings stored?

As you have seen, there are a large number of ways in which you can customize Cubase. While some of the settings you make are stored with each project, others are stored in separate preference files.

If you need to transfer your projects to another computer (e. g. in another studio), you can bring all your settings along by copying the desired preference files and installing them on the other computer.

NOTE

It is a good idea to make a backup copy of your preference files once you have set things up the way you want! This way, if another Cubase user wants to use his or her personal settings when working on your computer, you can restore your own preferences afterwards.

- On Windows, preference files are stored in the following location: “\Users\\AppData\Roaming\Steinberg\\”.
- On Mac OS, preference files are stored in the following location: “/Library/Preferences/<program name>/” under your home directory.
- On the Start menu, you will find a shortcut to this folder for easy access.
- The full path is: “/Users/<user name>/Library/Preferences/<program name>/”.

NOTE

The RAMpresets.xml file, which contains various presets settings (see below), is saved when exiting the program.

NOTE

Program functions (e. g. crossfade) or configurations (e. g. panels) not used in the project will not be stored.

Updating from a Previous Version of Cubase

When you are updating from Cubase 6 or higher, most of the customized settings of your previous installation are used for the new Cubase version.

When your previous Cubase version is older than Cubase 6, its settings are discarded, and the default settings of the new version of Cubase are used.

Disabling the Preferences

Sometimes you might experience odd program behaviour that can be due to inconsistent preferences settings. In such a case, you should save your project and relaunch Cubase. You can disable or delete the current preferences settings, and load the factory defaults instead.

PROCEDURE

1. Quit Cubase.
2. Launch Cubase, and when the splash screen appears, hold down **Shift-Ctrl/Cmd-Alt**.
3. Select one of the following options in the dialog that appears:
 - **Use current program preferences**
Opens the program with the current preference settings.
 - **Disable program preferences**
Disables the current preferences, and opens the program with the factory default settings instead.
 - **Delete program preferences**

Deletes the preferences and opens the program with the factory default settings instead. This process cannot be undone. Note that this affects all versions of Cubase installed on your computer.

RELATED LINKS

[Preferences](#) on page 996

Profiles (Cubase Pro only)

Profiles allow you to save customized program settings and preferences. You can switch between profiles, and import and export your profiles for use on different computers.

Profiles are helpful if you work on different computers if you use different settings for different kinds of projects, or in a studio environment where several users work on the same computer. Profiles are saved as files with file name extension `.srf`.

Profiles include the following:

- Preferences
- Toolbar settings for all windows
- Global workspaces
- Track control settings
- Track control presets
- Presets for input and output busses
- Plug-in collections
- Quantize presets
- Crossfade presets
- Key commands

All changes done for these settings are saved in the active profile.

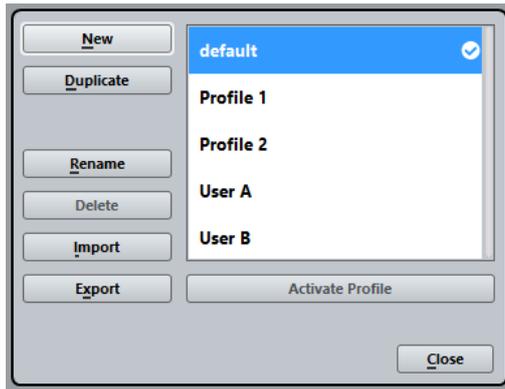
IMPORTANT

The following is not included in profiles: Settings in the **Device Setup** dialog and in the **VST Connections** window, presets in the **Studio** tab of the **VST Connections** window, track presets, plug-in presets, and project templates.

Profile Manager

The **Profile Manager** allows you to save customized program settings as profiles and to organize profiles on your computer.

- To open the **Profile Manager**, click **File > Profile Manager**.



The dialog lists all available profiles. The active profile is indicated by a checkmark.

To organize your profiles, you have the following options:

New

Adds a new profile with factory settings.

Duplicate

Duplicates the selected profile.

Rename

Allows you to rename the selected profile.

Delete

Deletes the selected profile.

Import

Opens a dialog that allows you to import a profile from a file.

Export

Opens a dialog that allows you to export the selected profile to a file.

Activate Profile

Activates the selected profile. You must restart the program for the change to take effect.

Close

Closes the dialog.

Creating Profiles

The **Profile Manager** allows you to create a new profile that is based on the factory default settings.

PROCEDURE

1. Select **File > Profile Manager**.
2. In the **Profile Manager**, click **New**.
3. In the **Add New Profile** dialog, enter a profile name and click **OK**.

RESULT

The new profile is added to the list.

AFTER COMPLETING THIS TASK

Activate the new profile to apply the settings.

RELATED LINKS

[Activating Profiles](#) on page 989

Duplicating Profiles

The **Profile Manager** allows you to create a duplicate of a profile and save it under a different name.

PROCEDURE

1. Select **File > Profile Manager**.
2. In the **Profile Manager**, select the profile that you want to duplicate.
3. Click **Duplicate**.
4. In the **Duplicate Profile** dialog, enter a profile name and click **OK**.

RESULT

The new profile is added to the list.

Activating Profiles

The **Profile Manager** allows you to switch to another profile. A profile switch requires a restart of Cubase.

PREREQUISITE

You have saved at least two profiles.

PROCEDURE

1. Select **File > Profile Manager**.
2. In the **Profile Manager**, select the profile that you want to activate.
3. Click **Activate Profile**.
4. Click **OK**.
5. Restart the application.

RESULT

The settings of the profile are now active.

Renaming Profiles

The **Profile Manager** allows you to rename profiles.

PROCEDURE

1. Select **File > Profile Manager**.
 2. In the **Profile Manager**, select the profile that you want to rename.
 3. Click **Rename**.
 4. In the **Rename Profile** dialog, enter a profile name and click **OK**.
-

Deleting Profiles

The **Profile Manager** allows you to delete profiles.

PREREQUISITE

You have saved at least two profiles.

NOTE

You cannot delete the active profile.

PROCEDURE

1. Select **File > Profile Manager**.
 2. In the **Profile Manager**, select the profile that you want to delete.
Select multiple profiles to delete them at once.
 3. Click **Delete**.
 4. Click **OK**.
-

RELATED LINKS

[Activating Profiles](#) on page 989

Exporting Profiles

The **Profile Manager** allows you to export profiles for use on another computer.

PROCEDURE

1. Select **File > Profile Manager**
 2. In the **Profile Manager**, select the profile that you want to export.
 3. Click **Export**.
 4. In the file dialog, specify the file name and the location.
 5. Click **Save**.
-

RESULT

The exported profile is saved as `.srf` file at the specified location.

AFTER COMPLETING THIS TASK

Import the profile on another computer.

Importing Profiles

The **Profile Manager** allows you to import profiles.

PROCEDURE

1. Select **File > Profile Manager**.
 2. In the **Profile Manager**, click **Import**.
 3. In the file dialog, select the profile that you want to import.
 4. Click **Open**.
-

RESULT

The imported profile is added to the list of available profiles.

AFTER COMPLETING THIS TASK

Activate the new profile to apply the settings.

RELATED LINKS

[Activating Profiles](#) on page 989

Optimizing

Optimizing Audio Performance

This section gives you some hints and tips on how to get the most out of your Cubase system, performance-wise.

NOTE

For details and current information on system requirements and hardware properties refer to the Cubase web site.

Performance Aspects

Tracks and Effects

The faster your computer, the more tracks, effects, and EQ you are able to play. Exactly what constitutes a fast computer is almost a science in itself, but some hints are given below.

Short Response Times (Latency)

Another aspect of performance is response time. The term “latency” refers to the buffering, that is, the temporary storing of small chunks of audio data during various steps of the recording and playback process on a computer. The more and larger those chunks, the higher the latency.

High latency is most irritating when playing VST instruments and when monitoring through the computer, that is, when listening to a live audio source via the Cubase MixConsole and effects. However, very long latency times (several hundred milliseconds) can also affect other processes like mixing, for example, when the effect of a fader movement is heard only after a noticeable delay.

While Direct Monitoring and other techniques reduce the problems associated with very long latency times, a system that responds fast will always be more convenient to work with.

- Depending on your audio hardware, it may be possible to trim your latency times, usually by lowering the size and the number of buffers.
- For details, refer to the audio hardware documentation.

Audio Hardware and Driver

The hardware and its driver can have some effect on regular performance. A badly written driver can reduce the performance of your computer. But where the hardware driver design makes the most difference is with latency.

NOTE

We recommend that you use audio hardware for which there is a specific ASIO driver.

This is especially true when using Cubase for Windows:

- Under Windows, ASIO drivers written specifically for the hardware are more efficient than the Generic Low Latency ASIO Driver and produce shorter latency times.
- Under Mac OS, audio hardware with properly written Mac OS (Core Audio) drivers can be very efficient and produce very low latency times.

However, there are additional features only available with ASIO drivers, such as the ASIO Positioning Protocol.

Settings That Affect Performance

Audio Buffer Settings

Audio buffers affect how audio is sent to and from the audio hardware. The size of the audio buffers affects both the latency and the audio performance.

Generally, the smaller the buffer size, the lower the latency. On the other hand, working with small buffers can be demanding for the computer. If the audio buffers are too small, you may get clicks, pops or other audio playback problems.

Adjusting the Buffer Size

To lower the latency, you can reduce the buffer size.

PROCEDURE

1. Select **Devices > Device Setup**.
 2. In the **Device Setup** dialog, select the driver from the devices list.
 3. Click **Control Panel**.
 4. Windows: Adjust the buffer size in the driver dialog that opens.
 5. Mac OS: Adjust the buffer size in the **CoreAudio Device Settings** dialog.
-

Multi Processing

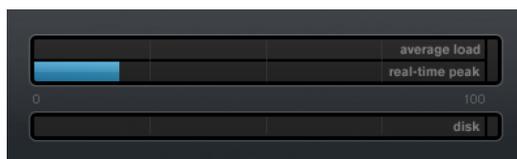
Multi processing distributes the processing load evenly to all available CPUs, allowing Cubase to make full use of the combined power of the multiple processors.

Multi processing is activated by default. You can find the setting in the **Advanced Options** of the **Device Setup** dialog.

VST Performance Window

This window shows the audio processing load and the hard disk transfer rate. This allows you to verify that you do not run into performance problems when adding effects or plug-ins, for example.

- To open the **VST Performance** window, select **Devices > VST Performance**.



Average load

Shows how much of the available CPU power is used for audio processing.

Real-time peak

Shows the processing load in the realtime path of the audio engine. The higher this value, the higher the risk that dropouts occur.

Overload indicator

The overload indicator to the right of the **real-time peak** indicator and the **average load** indicator displays overloads of the average or real-time indicator.

If it lights up, decrease the number of EQ modules, active effects, and audio channels that play back simultaneously. You can also activate the ASIO-Guard.

Disk

Shows the hard disk transfer load.

Disk overload indicator

The overload indicator to the right of the disk indicator lights up if the hard disk does not supply data fast enough.

If it lights up, use **Disable Track** to reduce the number of tracks playing back. If this does not help, you need a faster hard disk.

NOTE

You can show a simple view of the performance meter on the **Transport** panel and on the **Project** window toolbar. These meters only feature the average and the disk indicator.

ASIO-Guard

The ASIO-Guard allows you to shift as much processing as possible from the ASIO realtime path to the ASIO-Guard processing path. This results in a more stable system.

The ASIO-Guard allows you to preprocess all channels as well as VST instruments that do not need to be calculated in realtime. This leads to less dropouts, the ability to process more tracks or plug-ins, and the ability to use smaller buffer sizes.

ASIO-Guard Latency

High ASIO-Guard levels lead to an increased ASIO-Guard latency. When you adjust a volume fader, for example, you will hear the parameter changes with a slight delay. The ASIO-Guard latency, in contrast to the latency of the audio hardware, is independent from live input.

Restrictions

The ASIO-Guard cannot be used for:

- Realtime-dependent signals
- External effects and instruments

NOTE

If you select **Devices > Plug-in Manager** and click **Show Plug-in Information**, you can deactivate the ASIO-Guard option for selected plug-ins.

If you activate the monitoring for an input channel, a MIDI or a VST instrument channel, the audio channel and all dependent channels are automatically switched from ASIO-Guard to realtime processing and vice versa. This results in a gentle fade out and fade in of the audio channel.

Activating the ASIO-Guard

PROCEDURE

1. Select **Devices > Device Setup**.
2. In the **Device Setup** dialog, open the **VST Audio System** page.
3. Activate the **Activate ASIO-Guard** option.

NOTE

This option is only available, if you activate **Multi Processing**.

4. Select an **ASIO-Guard Level**.
The higher the level, the higher the processing stability and audio processing performance. However, higher levels also lead to an increased ASIO-Guard latency and memory usage.
-

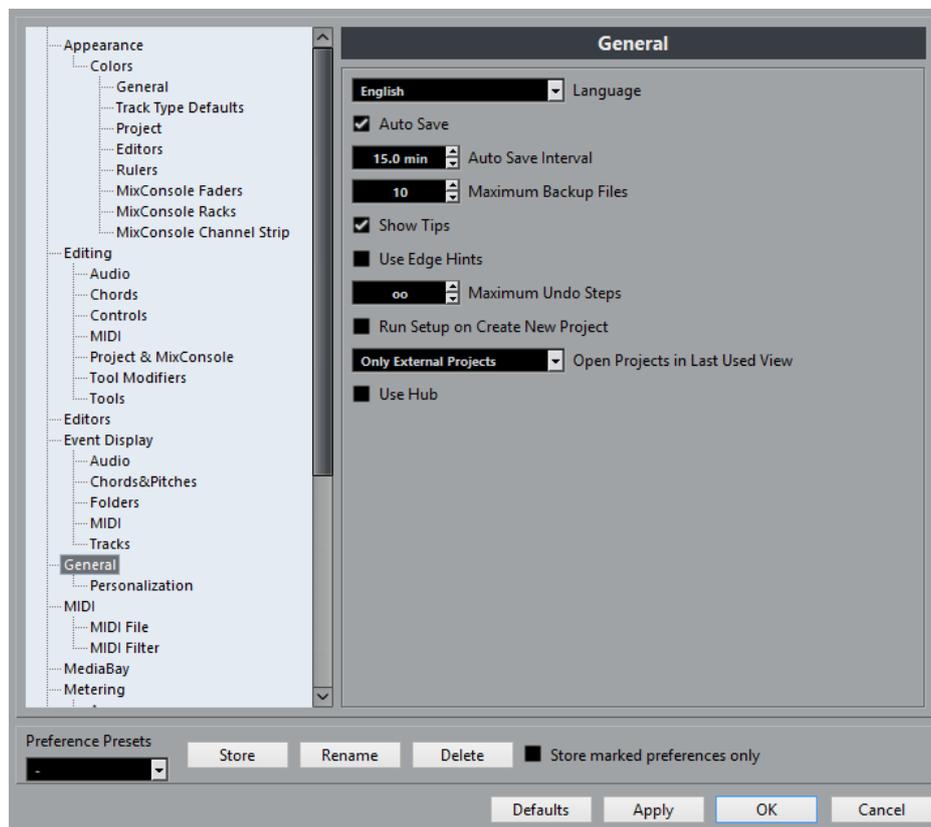
Preferences

The **Preferences** dialog provides options and settings that control the global behavior of the program.

Preferences Dialog

The Preferences dialog is divided into a navigation list and a settings page. Clicking one of the entries in the navigation list opens a settings page.

- To open the **Preferences** dialog, select **File > Preferences**.



In addition to the settings, the dialog provides the following options:

Preference Presets

Allows you to select a saved preference preset.

Store

Allows you to save the current preferences as a preset.

Rename

Allows you to rename a preset.

Delete

Allows you to delete a preset.

Store marked preferences only

Allows you to select which pages are included in the preset.

Help

Opens the dialog help.

Defaults

Resets the options on the active page to their default settings.

Apply

Applies any changes that you have made without closing the dialog.

OK

Applies any changes that you have made and closes the dialog.

Cancel

Closes the dialog without saving any changes.

Saving a Preference Preset

You can save complete or partial preference settings as presets.

PROCEDURE

1. Select **File > Preferences**.
2. In the **Preferences** dialog make your settings.
3. Click **Store** in the lower left section of the dialog.
4. Enter a preset name and click **OK**.

RESULT

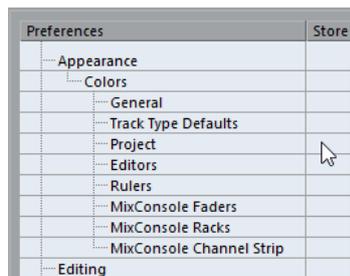
Your settings are now available on the **Preferences Presets** pop-up menu.

Saving Partial Preferences Settings

You can save partial preferences settings. This is useful when you have made settings that only relate to a certain project or situation, for example. When you apply a saved partial preference preset you only change the saved settings. All other preferences will be left unchanged.

PROCEDURE

1. Select **File > Preferences**.
2. In the **Preferences** dialog make your settings.
3. Activate **Store marked preferences only**.
In the preferences list a **Store** column is shown.



4. Click in the **Store** column of the preference pages that you want to save.
5. Click **Store** in the lower left section of the dialog.
6. Enter a preset name and click **OK**.

RESULT

Your settings are now available from the **Preferences Presets** pop-up menu.

Appearance

Colors

This page features subpages that allow you to change the default color settings.

General

Allows you to adjust the default colors for the focus zones and the desktop cover.

Track Type Defaults

Allows you to adjust the default colors for the different track types.

Project

Allows you to adjust the default colors in the **Project** window.

Editors

The editors use the **Project** window color scheme by default. If you want to specify separate editor colors, deactivate **Use Project Colors**.

Rulers

Allows you to adjust the default ruler colors.

MixConsole Faders

Allows you to adjust the default colors for the level faders of the channel types in the **MixConsole**.

MixConsole Racks

Allows you to adjust the default colors for the racks in the **MixConsole**.

MixConsole Channel Strip

Allows you to adjust the default colors for the channel strips in the **MixConsole**.

Editing

'Edit Solo'/'Record in MIDI Editors' follow focus

If this option is activated, and **Record in Editor** or **Solo Editor** is activated in a MIDI editor, these options follow the focus. That is, if the **Project** window gets the focus, **Record in Editor** and **Solo Editor** are suspended in the MIDI editor.

Default Track Time Type

This allows you to specify the default track time type for new tracks. When you change this setting, all new tracks will use the selected time type.

- **Musical**
All added tracks are set to musical time type. The respective button shows a note symbol.
- **Time Linear**
All new audio tracks use linear time base. The respective button shows a clock symbol.
- **Follow Transport Main Display**
New tracks use the primary time format setting on the transport panel. When this is set to **Bars+Beats**, tracks with musical time base will be added. When this is set to any of the other options (**Seconds**, **Timecode**, **Samples**, etc.), all new tracks will use linear time base.

Display Warning before Deleting Non-Empty Tracks

If this option is activated, a warning message is displayed if you delete tracks that are not empty.

Select Track on Background Click

This allows you to select a track by clicking in the event display background.

Auto Select Events under Cursor

If this option is activated, all events in the **Project** window or in an editor that are touched by the project cursor are automatically selected. This can be helpful when you rearrange your project, because it allows you to select whole sections (on all tracks) simply by moving the project cursor.

Cycle Follows Range Selection

If this option is activated, range selections that you make in the **Sample Editor** will be mirrored in the **Project** window as well. This lets you audition a range in the **Sample Editor** as a loop with the main transport controls, rather than with the **Audition** and **Audition Loop** controls in the **Sample Editor**.

Delete Overlaps

If this option is activated and you move, size, or nudge an event so that it partly overlaps another event, the other event is automatically resized so that the overlapped (hidden) section is removed. Hold **Shift** while moving to override this setting.

Parts Get Track Names

If this option is activated and you move an event from one track to another, the moved event will automatically be named according to its new track. Otherwise, the event will retain the name of the original track.

Lock Event Attributes

This setting determines which properties are affected when you lock an event (by selecting **Lock** from the **Edit** menu). You can select any combination of the following 3 options:

- **Position**
If this is locked, the event cannot be moved.
- **Size**
If this is locked, the event cannot be resized.
- **Other**
If this is locked, all other editing of the event is disabled. This includes adjusting the fades and event volume, processing, etc.

Quick Zoom

If this option is activated, the contents of parts and events will not be continuously redrawn when you zoom manually. Instead, the contents are redrawn once you have stopped changing the zoom – activate this if screen redraws are slow on your system.

Use Up/Down Navigation Commands for Selecting Tracks only

- If this option is deactivated and no event/part is selected in the **Project** window, the **Up Arrow/Down Arrow** keys are used to step through the tracks in the track list.
- If this option is deactivated and an event/part is selected in the **Project** window however, the **Up Arrow/Down Arrow** keys still step through the tracks in the track list. Only on the selected track, the first event/part will also be selected.
- If this option is activated, the **Up Arrow/Down Arrow** keys are only used to change the track selection – the current event/part selection in the **Project** window will not be altered.

Track Selection follows Event Selection

If this option is activated and you select an event in the **Project** window, the corresponding track is also automatically selected.

Automation Follows Events

If this option is activated, automation events will automatically follow when you move an event or part on the track.

This facilitates setting up automation that is related to a specific event or part, instead of a specific position in the project. For example, you can automate the panning of a sound effect event (having the sound pan from left to right, etc.) – if you need to move the event, the automation will automatically follow. The rules are:

- All automation events for the track between the start and end of the event or part will be moved. If there are automation events in the position to which you move the part or event, these will be overwritten.
- If you duplicate an event or part, the automation events will be duplicated as well.
- This function also affects copying and pasting.

Drag Delay

When you click and drag an event, this setting determines the delay before the event is moved. This helps you avoid accidentally moving events when you click on them in the **Project** window.

Editing - Audio

Treat Muted Audio Events like Deleted

If you have 2 overlapping audio events in your project and you mute the top one (the event you hear during playback), playback of the other (obscured) event will still only start at the end of the overlapping section.

If this is not what you want, **Treat Muted Audio Events like Deleted** allows you to immediately play the obscured event when muting the top event.

Use Mouse Wheel for Event Volume and Fades

- If this option is activated, you can use the mouse wheel to move the event volume curve up or down.
- When you hold down **Shift** while moving the mouse wheel, the fade curves will be affected. To move the end point of the fade in, position the mouse in the left half of the event. To move the start point of the fade out, position the mouse in the right half of the event.

On Import Audio Files

This setting determines what happens when importing an audio file into a project:

- **Open Options Dialog**
An Import Options dialog opens when you import, allowing you to select whether you want to copy the file to the audio folder and/or convert it to the project settings.
- **Use Settings**
Allows you to set the following standard actions:
 - Copy Files to Working Directory** copies the files to the project's audio folder before import.
 - Convert and Copy to Project If Needed** copies the files to the project's audio folder before import and converts them if the files have a different sample rate or a lower resolution than the project settings.
 - Split channels/Split multi-channel files** copies the files to the project's audio folder and splits stereo or multi-channel audio files into a corresponding number of mono files – one for each channel. Use the **Split File Name Format** pop-up menu to specify how the split files are named. This allows for compatibility with other products when exchanging audio files and avoids confusion if the source file contains no stereo or surround material, but poly-mono audio.

Enable Automatic Hitpoint Detection

If this option is activated, and you add an audio file to your project by recording or by importing, Cubase automatically detects its hitpoints. This allows you to navigate to hitpoints of an audio file from within the **Project** window.

Remove Regions/Hitpoints on all Offline Processes

If this option is activated, and you perform offline processing on an audio range that contains regions, these will be removed.

On Processing Shared Clips

This setting determines what happens when you apply processing to a shared clip, that is, a clip that is used by more than one event in the project:

- **Open Options Dialog**
An **Options** dialog appears, allowing you to select whether you want to create a new version of the clip or apply the processing to the existing clip.

- **Create New Version**
A new editing version of the clip is automatically created, and the processing is applied to that version (leaving the original clip unaffected).
- **Process Existing Clip**
The processing is applied to the existing clip (which means that all events playing that clip will be affected).

Time Stretch Tool Algorithm

Use this option to select a default algorithm that is applied when using the Object Selection tool in **Sizing Applies Time Stretch** mode. This mode allows you to resize parts and events in the **Project** window and apply time stretch to their contents in the process, so that the audio material is adjusted to fit the new length of the part or event. The following settings are available:

- **MPEX – Preview Quality**
Use this mode only for preview purposes.
- **MPEX – Mix Fast**
This mode is a very fast mode for preview. This works best with composite music signals (mono or stereo material).
- **MPEX – Solo Fast**
Use this mode for single instruments (monophonic material) and voice.
- **MPEX – Solo Musical**
Same as above but higher quality.
- **MPEX – Poly Fast**
Use this for processing monophonic and polyphonic material. This is the fastest setting that still provides very good results. You can use this for drum loops, mixes, or chords.
- **MPEX – Poly Musical**
Use this for processing monophonic and polyphonic material. This is the recommended MPEX default quality setting. You can use this for drum loops, mixes, or chords.
- **MPEX – Poly Complex**
This high quality setting produces high CPU load. Use this setting when processing difficult material or for stretch factors above 1.3.
- **Realtime**
This algorithm is much quicker and allows for better CPU performance than MPEX, but produces a lower sound quality.

Default Warping Algorithm

Determines which warp algorithm is used for new audio clips in the project.

Editing - Chords

'X' Chords Mute Notes on Tracks That are in Follow Chord Track Mode

This determines what happens when you play back a track that follows the chord track and the cursor reaches an undefined chord event (X chord). Activate this option to mute playback. Deactivate this option to continue playback of the last defined chord event.

Disable 'Acoustic Feedback' during Playback

If you activate this option, **Acoustic Feedback** is automatically disabled on playback. This ensures that chord events are not triggered twice.

Hide muted Notes in Editors

If you set up a MIDI track to follow the chord track by activating one of the **Follow Chord Track** options, some of the original MIDI notes may be muted. Activate this option to hide these notes in the editors.

Editing - Controls

Many Cubase parameters are shown as rotary encoders, sliders, and buttons that emulate hardware interfaces. Others are edited numerically in value fields. This page allows you to select the preferred ways of controlling encoders, sliders, and value fields.

Value Box/Time Control Mode

The menu contains the following options:

- **Text Input on Left-Click**
In this mode, clicking a value box will open it for editing by typing.
- **Increment/Decrement on Left/Right-Click**
In this mode, you can click with the left or right mouse button to decrease or increase the value. To edit values by typing in this mode, please double-click. Under Mac OS, right-clicking is the same as **Ctrl/Cmd**-clicking. We recommend that you use a 2-button mouse and set up the right button to generate a **Ctrl/Cmd**-click.
- **Increment/Decrement on Left-Click and Drag**
In this mode, you can click and drag up or down to adjust the value (much like dragging a vertical fader). Double-click to enter values manually.

Knob Mode

The menu contains the following options:

- **Circular**
To move an encoder, click on it and drag in a circular motion, such as turning a real encoder. When you click anywhere along the encoder's edge, the setting is immediately changed.
- **Relative Circular**
Works like the **Circular** option, but clicking does not automatically change the setting. This means you can make adjustments to the current setting by clicking anywhere on an encoder and dragging. There is no need to click on the exact current position.
- **Linear**
To move an encoder, click on it and drag up or down (or left or right) with the mouse button pressed – as if the encoder was a vertical (or horizontal) slider.

Slider Mode

The menu contains the following options:

- **Jump**
In this mode, clicking anywhere on a slider will make the slider handle instantly move to that position.
- **Touch**
In this mode, you have to click on the actual slider handle to adjust the parameter. This reduces the risk of accidentally moving sliders.
- **Ramp**

In this mode, clicking anywhere on a slider (but not on the actual handle) and keeping the mouse button pressed causes the handle to move smoothly to the new position.

- **Relative**

In this mode, clicking on a slider will not immediately change the setting. Instead you click and drag up or down – the setting will be changed according to how far you drag, not according to where you click.

Editing - MIDI

Select Controllers in Note Range: Use Extended Note Context

If this option is activated and you move notes together with their controllers, for example, in the Key Editor, the extended note context will be taken into account. This means that controllers between the last selected note and the following note (or the end of the part) will also be moved. If this option is deactivated, only the controllers between the first and the last selected note will be moved.

Legato Overlap

Determines the result of the **Legato** function on the **MIDI** menu.

- If **Legato Overlap** is set to 0 Ticks, the **Legato** function extends each selected note so that it reaches the next note exactly.
- Setting **Legato Overlap** to a positive value causes the notes to overlap by the specified number of ticks.
- Setting **Legato Overlap** to a negative value makes the Legato function leave a slight gap between the notes.

Legato Mode: Between Selected Notes Only

If this option is activated, the length of selected notes will be adjusted so that they reach the next selected note, allowing you to apply **Legato** only to your bass line, for example.

Split MIDI Events

If you split a MIDI part in the **Project** window (with the **Cut** tool or one of the split functions) so that the split position intersects one or several MIDI notes, the result depends on this setting.

- If **Split MIDI Events** is activated, the intersected notes are split. This creates new notes at the beginning of the second part.
- If **Split MIDI Events** is deactivated, the notes will remain in the first part, but stick out after the end of the part.

Split MIDI Controllers

If you split a MIDI part containing controllers, the result depends on this setting:

- If Split MIDI Controllers is activated and the part contains a controller with a value other than zero at the split position, a new controller event (of the same type and value) will be inserted at the split position (at the start of the second part).
- If Split MIDI Controllers is deactivated, no new controller events will be inserted.

NOTE

If you just split a part and play back the result, it will sound the same regardless of this setting. However, if you split a part and delete the first half or move the

second half to a different position in the project, you may want to activate **Split MIDI Controllers** to make sure all controllers have the correct value at the beginning of the second part.

Editing - Project & MixConsole

Select Channel/Track on Solo

When you activate this option, a track in the track list or a channel in the **MixConsole** automatically gets selected if **Solo** is activated. Deactivating this option always keeps the current selection status, regardless of the solo setting for the tracks.

Select Channel/Track on Edit Settings

When you activate this option, a track in the track list or a channel in the **MixConsole** automatically gets selected when you click the respective edit button. Deactivating this option always keeps the current track/channel selection.

Scroll to selected Track

If you activate this option, selecting a **MixConsole** channel automatically scrolls the track list to display the respective track.

Sync Selection in Project Window and MixConsole

If this option is activated, and you select a track in the **Project** window, the corresponding channel is automatically selected in the **MixConsole** and vice versa.

This can be a very handy feature when making detailed settings for audio and MIDI channels: open the **Channel Settings** window for a track by clicking its edit button, and position it so that it can remain open without obstructing the view. Then you can simply select the track for which you want to make settings in the **Project** window. The **Channel Settings** window will automatically change to show the settings for the selected track.

Enable Record on Selected MIDI Track

If this option is activated, the selected MIDI tracks are automatically record-enabled.

Enable Record on Selected Audio Track

If this option is activated, selected audio tracks are automatically record-enabled.

Enable Solo on Selected Track

If this option is activated, the selected tracks are automatically soloed.

Deep Track Folding

If this option is activated, any folding settings that you make on the **Track Folding** submenu of the **Project** menu also affect the subelements of the tracks. For example, if you fold in a folder track that contains 10 audio tracks, of which 5 have several open automation tracks, all these audio tracks within the folder track will also be folded in.

Enlarge Selected Track

Activate this option to enter a mode where the selected track in the **Project** window will be enlarged. You can adjust the size directly in the track list if the default enlargement factor does not suit you. When you select another track in the track list, this track is automatically enlarged, and the previously selected track is displayed in its previous size.

Editing - Tool Modifiers

On this page you can specify which modifier keys are used for additional functionality when using tools.

PROCEDURE

1. Select an option in the **Categories** list.
 2. Select the action for which you want to edit the modifier key in the **Action** list.
 3. On your computer keyboard, hold down the modifier keys and click **Assign**.
-

RESULT

The current modifier key(s) for the action is replaced. If this tool already has assigned modifier key(s), you will be asked whether you want to replace them.

Editing - Tools

Pop-up Toolbox on Right-Click

If this option is activated, the toolbox opens on right-click in the event display and editors. You can change the number of rows in which the tools are arranged on the toolbox. Keep the right mouse button pressed until the mouse pointer changes to a double arrow and drag to the bottom or right.

- To open the context menu instead of the toolbox, press any modifier key when right-clicking.

Cross-Hair Cursor

This allows you to set up a cross-hair cursor when working in the event display and editors, facilitating navigation and editing, especially when arranging in large projects. You can set up the colors for the line and the mask of the cross-hair cursor, and define its width. The cross-hair cursor works as follows:

- If the **Selection** tool (or one of its subtools) is selected, the cross-hair cursor appears when you start moving or copying a part/event or when you use the event trim handles.
- If the **Draw** tool, the **Cut** tool, or any other tool that makes use of this function is selected, the cross-hair cursor appears as soon as you move the mouse over the event display.
- The cross-hair cursor is only available for tools where such a function is of any use.

NOTE

If the **Key Editor**, **Drum Editor** or the **Audio Part Editor** is open in the lower zone of the **Project** window and **Link Project and Lower Zone Cursors** is activated, the cross-hair cursor is shown in the lower zone editor and in the **Project** window.

Select Tool: Show Extra Info

Activate this to show a tooltip for the **Object Selection** tool in the **Project** window event display. This tooltip indicates the current pointer position and the name of the track and event at which you are pointing.

Warn before switching Display Domain (Timewarp Tool) (Cubase Pro only)

If this option is activated, a warning opens if you select the **Timewarp** tool and the ruler is not set to **Bars and Beats**.

Zoom Tool Standard Mode: Horizontal Zooming Only

This affects the result when using the **Zoom** tool (magnifying glass).

If this option is activated and you drag a selection rectangle with the **Zoom** tool, the window is only zoomed horizontally and the track height does not change. If this option is deactivated, the window is zoomed both horizontally and vertically.

Editors

Default MIDI Editor

Determines which editor is opened when you double-click a MIDI part or when you select it and press **Ctrl/Cmd-E**. Note that this setting is overwritten for tracks with drum maps if the **Use Drum Editor when Drum Map is assigned** option is activated.

Use Drum Editor when Drum Map is assigned

If this option is activated, parts on MIDI tracks to which drum maps are assigned are shown with drum note symbols. The parts will automatically open in the **Drum Editor** on double-click. This overwrites the **Default MIDI Editor** setting.

Double-Click opens Editor in a Window/in Lower Zone

Determines where an editor is opened when you double-click an audio event or a MIDI part or when you use the key command assigned to **Open/Close Editor**.

Open Editor Commands open Editors in a Window/in Lower Zone

Determines where an editor is opened when you use an open command from the **Audio** or **MIDI** menu or the corresponding key commands.

Editor Content Follows Event Selection

If this option is activated, the parts or events shown in the open editor will follow the selection that you make in the **Project** window.

Event Display

The **Event Display** section contains several settings for customizing the display in the **Project** window.

Show Event Names

Determines whether the names of parts and events are shown.

Hide Truncated Event Names

When zooming or resizing elements, the events can become very small so that the name is no longer completely visible. The name gets truncated. If this option is activated, event names are hidden if they do not fit into the event.

Show Overlaps

When events overlap, this setting allows you to specify when the overlapping areas are displayed.

Grid Overlay Intensity

Increases or decreases the overlay intensity of the displayed grid lines.

Event Handling Opacity

Increases or decreases the opacity of an overlying event background when you move it.

Smallest Track Height To Show Data

Specifies from which track height the track contents are displayed.

Smallest Track Height To Show Name

Specifies from which track height the track names are displayed.

Event Display - Audio

Interpolate Audio Waveforms

If you have zoomed in to one sample per pixel or less, the appearance of the samples depends on this setting. If this option is deactivated, single sample values are drawn as steps. If this option is activated, the sample values are interpolated to form curves.

Show Event Volume Curves Always

If this option is activated, event volume curves, as created by the fade and volume handles, are shown for all events, regardless of whether they are selected or not. If this option is deactivated, volume curves are only shown for selected events. However, note that you can still adjust fades and volumes for events that are not selected, by clicking and dragging the top left, middle, or right edge respectively.

Show Waveforms

If this option is activated, audio waveforms are displayed for audio events.

Show Hitpoints on Selected Events

If this option is activated, hitpoints are displayed for audio events.

Waveform Brightness

Increases or decreases the brightness of the displayed waveforms.

Waveform Outline Intensity

Increases or decreases the intensity of the waveform outline.

Fade Handle Brightness

Increases or decreases the brightness of the set fade lines within audio events.

Background Color Modulation

If this option is activated, the backgrounds of audio waveforms reflect the waveform dynamics. This is especially useful to get an overview when working with small track heights.

Event Display - Chords & Pitches

Pitch Notation

- The **Note Name** pop-up menu lets you select between 3 ways of displaying chords: **English**, **German**, and **Solfège**.
- The **Naming Format** pop-up menu lets you determine how MIDI note names (pitches) are displayed in editors, etc. The options are: **MIDI**, **MIDI + MIDI Note Number**, and **Classic (Helmholtz)**.
- The options **Display 'Bb' as 'B'** and **Display 'B' as 'H'** allow you to change the corresponding pitch names.
- If you activate **Enharmonics from Chord Track**, and your project contains a chord track with chord events, these chord events determine if the

enharmonically equivalent notes in the **Key Editor** and in the **List Editor** are displayed as sharp or flat.

Chord Font

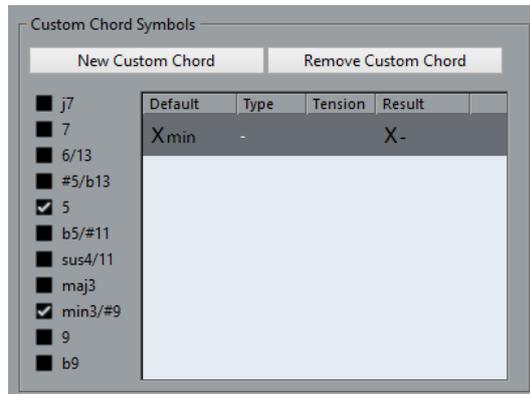
Allows you to specify a font for all chord symbols.

Chord Symbols

There are several ways of indicating chord types, for example, major and minor chords. These options allow you to select your preferred display method for major 7th chords, minor chords, half-diminished chords, diminished chords, and augmented chords.

Custom Chord Symbols

You can modify the default chord symbols that are used on the chord track, for the chord pads, and in the **Score Editor**.



- The **New Custom Chord** button allows you to add a new custom chord symbol.
- The options to the left allow you to specify the chord for which you want to change the chord symbol.
- Click the **Type** and **Tension** fields and enter your custom symbol.

NOTE

You must define custom symbols for each set of tensions.

- The **Result** field shows how the chord will be displayed.
- The **Remove Custom Chord** button allows you to remove the custom chord symbol that is selected in the list.

EXAMPLE

To change the appearance of all minor chords from `Xmin` to `X-`, click **New Custom Chord**, activate **5** and **min3/#9** to define the chord type and change the symbol in the Type column from `min` to `-`.

Event Display - Folders

Show Event Details

If this option is activated, event details are displayed. If this option is deactivated, data blocks are displayed.

This setting depends on the **Show Data on Folder Tracks** setting.

Show Data on Folder Tracks

Determines in which case data blocks or event details are displayed on folder tracks.

- **Always Show Data**
If this option is activated, data blocks or event details are always displayed.
- **Never Show Data**
If this option is activated, nothing is displayed.
- **Hide Data When Expanded**
If this option is activated, the display of events is hidden when you open folder tracks.

Event Display - MIDI

Part Data Mode

Determines if and how events in MIDI parts are shown: not shown, as lines, as score notes, as drum notes, or as blocks. Note that this setting is overwritten for tracks with drum maps if the **Use Drum Editor when Drum Map is assigned** option is activated.

Show Controllers

Governs whether non-note events such as controllers, etc. are shown in MIDI parts.

Note Brightness

Increases or decreases the brightness of note events.

Controller Brightness

Increases or decreases the brightness of controller events.

Event Display - Tracks

Colorize Track Controls

This slider allows you apply the track color to the track controls. Drag the slider to the right to intensify the color.

Colorize Only Folder Track Controls

Activate this to restrict the effect of the **Colorize Track Control** function to folder tracks only. This is useful in projects with a large number of tracks and folder tracks.

Default Track Name Width

Allows you to determine the default name width for all track types.

Auto Track Color Mode

This offers you several options for automatically assigning colors to tracks that are added to the project:

- **Use Default Track Color**
New tracks get the default event color.
- **Use Previous Track Color**
New tracks get the same color as the track above them in the track list.
- **Use Previous Track Color + 1**
This is similar to the **Use Previous Track Color** option, except that the new tracks get the next color in the color palette.

- **Use Last Applied Color**
New tracks get the color that you last applied to an event/part.
- **Use Random Track Color**
Inserted tracks get random track colors.

General

The **General** page contains general settings that affect the program user interface. Set these according to your preferred work methods.

Language

Allows you to select which language is used in the program. After switching the language, you must restart the program for the change to take effect.

Auto Save

If this option is activated, Cubase automatically saves backup copies of all open projects with unsaved changes. These are named `Name.bak`, where name is the name of the project, and are saved in the project folder. Backup copies of unsaved projects are named `#UntitledX.bak` where X is an incremental number, to allow multiple backup copies in the same project folder.

Auto Save Interval

Allows you to specify how often a backup copy is created.

Maximum Backup Files

Allows you to specify how many backup files will be created with the **Auto Save** function. When the maximum number of backup files is reached, the existing files will be overwritten (starting with the oldest file).

Show Tips

If this option is activated and you position the pointer over an icon or button in Cubase, an explanatory tooltip is displayed after a second.

Use Edge Hints

If this option is activated, you can position the mouse pointer at one of the **Project** window edges to show a pane with options to open or close the sections.

Maximum Undo Steps

Allows you to specify the number of undo levels.

Run Setup on Create New Project

If this option is activated, Cubase automatically displays the **Project Setup** dialog every time you create a new project. This allows you to specify the basic project configuration.

Open Projects in Last Used View

Allows you to select whether projects are opened using their original window layout and settings, or using the view that you last used on your computer. This can either be the last used view that was saved on your computer or one of your specified global workspaces.

- **Never**
Projects are always opened using their original window layout and settings.
- **Only External Projects**

Projects that have been created on a different computer are opened using the view that you last used on your computer. Projects that have been created on this computer are opened using their original window layout and settings.

- **Always**

Projects are always opened using the view that you last used on your computer.

Use Hub

Activate this option to open the **Hub** when you start Cubase or create a new project using the **File** menu.

General - Personalization

Default Author Name

Allows you to specify an author name that is used by default for new projects. This will be included as metadata when exporting audio files with an iXML chunk.

Default Company Name

Allows you to specify a company name that is used by default for new projects. This will be included as metadata when exporting audio files with an iXML chunk.

MIDI

This page contains settings that affect MIDI recording and playback.

MIDI Thru Active

If this option is activated, all MIDI tracks that are record-enabled or have monitoring activated will “echo” incoming MIDI data, sending it back out on their respective MIDI outputs and channels. This allows you to hear the correct sound from your MIDI instrument during recording.

NOTE

If you use MIDI Thru, select **Local Off** mode on your MIDI instrument to prevent each note from sounding twice.

Reset on Stop

If this option is activated, Cubase sends out MIDI Reset messages (including noteoff and controller resets) on stop.

Never Reset Chased Controllers

If this option is activated, controllers are not reset to 0 when you stop playback or move to a new position in the project.

Length Adjustment

This allows you to enter a length adjustment value in ticks by which the notes that have the same pitch and MIDI channel are adjusted. This ensures that there is always a short time between the end of one note and the start of another. By default, there are 120 ticks per 1/16 note, but you can adjust this with the **MIDI Display Resolution** setting.

Chase Events

Event types for which an option is activated are chased when you locate to a new position and start playback. This makes your MIDI instruments sound as they should when you locate to a new position and start playback.

If **Chase not limited to Part Boundaries** is activated, MIDI controllers are also chased outside the part boundaries, and the chase is performed on the part touched by the cursor as well as on all the parts to the left of it. Deactivate this for very large projects, as it slows down processes such as positioning and soloing.

MIDI Display Resolution

This allows you to set the display resolution for viewing and editing MIDI data. This only affects how MIDI events are displayed and not how they are recorded.

Insert Reset Events after Record

If this option is activated, a reset event is inserted at the end of each recorded part. This resets controller data, such as **Sustain, Aftertouch, Pitchbend, Modulation, Breath Control**. This is useful if you stop recording before the note off command is sent, for example.

Audition through MIDI Inserts/Sends

If this option is activated, the layering of MIDI instruments (by MIDI sends) is also active within the MIDI editors. This way, the acoustic feedback of the editors sends the MIDI data not only to the output selected for the track, but additionally through any MIDI inserts and MIDI sends assigned to it. However, this also means that MIDI events will be sent through any MIDI plug-ins assigned to this track.

MIDI Latency Mode

Allows you to specify the latency of the MIDI playback engine.

Low lowers the latency and increases the responsiveness of the MIDI playback engine. However, this setting might also decrease your computer performance, if your project contains lots of MIDI data.

Normal is the default mode and the recommended setting for most workflows.

High increases the latency and the playback buffer. Use this, if you work with complex VST Instrument libraries or with projects that have a very high performance level.

MIDI Max. Feedback in ms

This allows you to set the maximum length of the notes when using **Acoustic Feedback** in MIDI editors.

MIDI - MIDI File

Export Options

These options allow you to specify what data is included in exported MIDI files.

Export Inspector Patch

If this option is activated, the MIDI patch settings in the Inspector - Bank Select and Program Select (used for selecting sounds in the connected MIDI instrument) are included as MIDI Bank Select and Program Change events in the MIDI file.

Export Inspector Volume/Pan

If this option is activated, Volume and Pan settings made in the Inspector are included as MIDI Volume and Pan events in the MIDI file.

Export Automation

If this option is activated, the automation data (just as it is heard during playback) is converted to MIDI controller events and included in the MIDI file. This also includes automation recorded with the MIDI Control plug-in.

Note that if a continuous controller (e. g. CC7) has been recorded but the Read button is deactivated for the automation track (i. e. the automation is effectively switched off for this parameter), only the part data for this controller will be exported.

If this option is deactivated and the Read Automation button is activated, no continuous controllers will be exported. If the Read button is deactivated, the controller data of the MIDI part are exported (these will now be handled like "regular" part data).

It is recommended to activate the "Export Automation" option.

Export Inserts

If this option is activated and you are using MIDI modifiers or any MIDI plug-ins as insert effects, the modifications to the original MIDI notes that occur as a result of the effect(s) will be included in the MIDI file. A MIDI delay, for example, will produce a number of repeats to a MIDI note by actually adding additional, "echoing" notes at rhythmic intervals - these notes will be included in the MIDI file if the option is activated.

Export Sends

If this option is activated and you are using any MIDI plug-ins as send effects, the modifications to the original MIDI notes that occur as a result of the effect(s) will be included in the MIDI file.

Export Markers

If this option is activated, any markers you have added will be included in the MIDI file as Standard MIDI File Marker events.

Export as Type 0

If this option is activated, the MIDI file will be of Type 0 (all data on a single track, but on different MIDI channels). If you do not check this option, the MIDI file will be of Type 1 (data on separate tracks). Which type to choose depends on what you want to do with the MIDI file (in which application or sequencer it is to be used).

Export Resolution

You can specify a MIDI resolution between 24 and 960 for the MIDI file. The resolution is the number of pulses, or ticks, per quarter note (PPQ) and determines the precision with which you will be able to view and edit the MIDI data. The higher the resolution, the higher the precision. The resolution should be chosen depending on the application or sequencer with which the MIDI file will be used though, because certain applications and sequencers may not be able to handle certain resolutions.

Export Locator Range

If this option is activated, only the range between the left and right locator will be exported.

Export includes Delay

If this option is activated, any delay settings you have made in the **Inspector** will be included in the MIDI file.

NOTE

- To include other **Inspector** settings, you must convert the settings to real MIDI events and properties by using the **Merge MIDI in Loop** function for each track.
- Exported MIDI files include the tempo and time signature events of the **Tempo Track Editor** or, if the tempo track is deactivated, the current tempo and time signature.

Import Options

These options allow you to specify what data is included in imported MIDI files.

Extract First Patch

If this option is activated, the first Program Change and Bank Select events for each track are converted to Inspector settings for the track.

Extract First Volume/Pan

If this option is activated, the first MIDI Volume and Pan events for each track are converted to Inspector settings for the track.

Import Controller as Automation Tracks

If this option is activated, MIDI controller events in the MIDI file will be converted to automation data for the MIDI tracks. If this option is deactivated, controller data for the MIDI parts will be imported.

Import to Left Locator

If this option is activated, the imported MIDI file will be placed so that it starts at the position of the left locator - otherwise it will start at the beginning of the project. Note that if you choose to have a new project created automatically, the MIDI file will always start at the beginning of the project.

Import Markers

If this option is activated, Standard MIDI File Markers in the file will be imported and converted to Cubase markers.

Import dropped File as single Part

If this option is activated and you drag and drop a MIDI file into the project, the whole file will be placed on a single track.

Ignore Master Track Events on Merge

If this option is activated and you import a MIDI file into the current project, tempo track data in the MIDI file is ignored. The imported MIDI file will play according to the current Tempo track in the project.

If this option is deactivated, the Tempo Track Editor will be adjusted according to the tempo information in the MIDI file.

Auto Dissolve Format 0

If this option is activated and you import a MIDI file of type 0 into the project, the file will automatically be "dissolved": For each embedded MIDI channel in the file, a separate track will be inserted in the Project window.

If this option is deactivated, only one MIDI track will be created. This track will be set to MIDI Channel "Any", allowing all MIDI events to play back on their original channels. You can also use the "Dissolve Part" function on the MIDI menu to distribute the events onto different tracks (or lanes) with different MIDI Channels at a later stage.

Destination

This allows you to specify what happens when you drag a MIDI file into the project:

- Select **MIDI Tracks** to create MIDI tracks for the imported file.
- Select **Instrument Tracks** to create instrument tracks for each MIDI channel in the MIDI file and let the program automatically load appropriate presets.
- Select **HALion Sonic SE multi-timbral** to create several MIDI tracks, each routed to a separate instance of HALion Sonic SE in the **VST Instruments** window and load the appropriate presets.

Import Karaoke Lyrics as Text

Activate this to convert karaoke lyrics in the MIDI file to text that can be displayed in the **Score Editor**. If this option is deactivated, lyrics are only shown in the **List Editor**.

MIDI - MIDI Filter

This page allows you to prevent certain MIDI messages from being recorded and/or echoed by the MIDI Thru function (thruput).

The page is divided into 4 sections:

Record

Activating any of these options prevents the corresponding type of MIDI message from being recorded. It will, however, be thruput, and if already recorded, it will play back normally.

Thru

Activate any of these options to prevent the corresponding type of MIDI message from being thruput. It will, however, be recorded and played back normally.

Channels

If you activate a Channel button, no MIDI messages on that MIDI Channel will be recorded or thruput. Already recorded messages will however be played back normally.

Controller

Allows you to prevent certain MIDI controller types from being recorded or thruput.

To filter out a controller type, select it from the list at the top of the section and click "Add". It will appear in the list below.

To remove a controller type from the list (allow it to be recorded and thruput), select it in the lower list and click "Remove".

MediaBay

Show File Extensions in Results List

Activate this to display file name extensions in the **Results** list.

Maximum Items in Results List

This allows you to specify the maximum number of files that are displayed in the **Results** list. This helps you to avoid unmanageably long lists of files in the **Results** list.

Allow Editing in Results List

Activate this to edit attributes also in the **Results** list. Otherwise, editing can only be done in the **Attribute Inspector**.

Scan Folders only when MediaBay is open

Activate this to scan Cubase for media files when the **MediaBay** window is open. Otherwise, the folders are scanned in the background even when the **MediaBay** window is closed.

NOTE

During playing back or recording no folder scans are performed.

Scan unknown File Types

Activate this to open and scan any file in the search location and ignore files that cannot be recognized.

Metering

Map Input Bus Metering to Audio Track (in Direct Monitoring)

This allows you to map the input bus metering to monitor-enabled audio tracks, giving you the opportunity to watch the input levels of your audio tracks when working in the **Project** window. For this to work, activate **Direct Monitoring** in the **Device Setup** dialog.

- If this option is activated, audio tracks show the metering signal from the input bus to which they are routed as soon as the track is monitor-enabled. Note that the tracks are mirroring the input bus signal, that is, you will see the same signal in both places. When using mapped metering, any functions, such as trimming, that you apply to the audio track are not reflected in its meters.
- If this option is not activated, metering works as usual.

Meters' Peak Hold Time

This allows you to specify for how long the peak levels are held in the meters. For this to work, deactivate **Meters - Hold Forever** in the **MixConsole**.

Meters' Fallback

This allows you to specify how quickly the meters in the **MixConsole** return to lower values after signal peaks.

Metering - Appearance

On this page you can assign colors to level meter values to quickly identify what levels are reached. You can adjust the colors for the channel meter or the master meter. For the master meter you can only make changes for the **Digital Scale** scaling mode. Changes take effect when you click **Apply** or **OK**.

To adjust the levels and colors, activate the channel meter or master meter option and proceed as follows:

- To specify the level for a color change, double-click a handle to the right of the meter scale and enter the level (dB) value. Note that for dB values less than 0, you must add a minus sign before the entered number. You can also click a handle and drag it to a specific level. Press **Shift** for more accurate positioning. Alternatively, you can nudge with the **Up Arrow/Down Arrow** keys. Press **Shift** for faster positioning.
- To assign a color, click the upper or lower part of a handle, and use the color selector pane to select a color. Selecting the same color for the upper and lower part of the handle results in a meter that changes its colors gradually, while different colors indicate level changes even more precisely.
- To add more color handles, click **Add**, or **Alt**-click at a level position to the right of the meter scale. Each new handle is automatically associated with a default color.
- To remove a handle, select the handle and click **Remove**, or **Ctrl/Cmd**-click the handle.

Record

This page contains settings related to audio and MIDI recording. Select one of the available entries.

Deactivate Punch In on Stop

If this option is activated, Punch In on the Transport panel is automatically deactivated whenever you enter Stop mode.

Stop after Automatic Punch Out

If this option is activated, playback will automatically stop after automatic Punch Out (when the Project Cursor reaches the Right Locator and Punch Out is activated on the Transport panel). If the Post-roll value on the Transport panel is set to a value other than zero, playback will continue for the set time before stopping.

Record - Audio

Audio Pre-Record Seconds

This allows you to specify for how many seconds any incoming audio you play is captured in buffer memory during playback or in stop mode.

When Recording Wave Files larger than 4GB

This allows you to specify what happens if you record Wave files that are larger than 4 GB.

- To split the Wave file, activate **Split Files**.
Use this if you work on a FAT32 file system that supports only file sizes up to 4 GB.
- To save the Wave file as RF64 file, activate **Use RF64 Format**.
RF64 files use the `.wav` extension. However, they can only be opened with an application that supports the RF64 standard.

Create Audio Images During Record

If this option is activated, Cubase calculates the waveform image and displays it during the actual recording process.

NOTE

This realtime calculation uses some extra processing power.

Record - Audio - Broadcast Wave

This page allows you to specify the **Description**, **Author**, and **Reference** text strings that are embedded in recorded Broadcast Wave files. The settings you make here also appear as default strings in the **Broadcast Wave Chunk** dialog when you export files to certain formats (not only Broadcast Wave files can contain embedded information, but also Wave, Wave 64, and AIFF files).

Record - MIDI

Record-Enable allows MIDI Thru

Activate this option if you do not want record-enabled MIDI or instrument tracks to echo incoming MIDI data. This prevents hearing doubled notes on record-enabled tracks to which a VST instrument is assigned.

Snap MIDI Parts to Bars

Activate this to lengthen recorded MIDI parts automatically to start and end at whole bar positions. If you are working in a Bars+Beats-based context, this can make editing (Moving, Duplicating, Repeating, etc.) easier.

MIDI Record Catch Range in ms

When you record starting at the left locator, this setting helps you make sure that the very start of the recording is included. If you raise the Record Catch Range, Cubase will catch the events played just before the recording start point, eliminating this problem.

Retrospective Record

If this option is activated, the program captures MIDI input in buffer memory, even when not recording. The contents of the buffer memory can then be retrieved and turned into a MIDI part on a record-enabled MIDI track. This therefore allows you to capture any MIDI notes you play in stop mode or during playback and later turn them into a recorded MIDI part.

Use the **Retrospective Record Buffer Size** setting to determine how much MIDI data can be captured in the buffer.

ASIO Latency Compensation Active by Default

This determines the initial state of the **ASIO Latency Compensation** button in the track list for MIDI or instrument tracks.

If you record live on a VST instrument, you usually compensate the latency of your audio card by playing too early. In consequence, the timestamps are recorded too early. By activating this option, all recorded events are moved by the current latency, and playback sounds like during the recording situation.

Replace Recording in Editors

This affects the result of recording in a MIDI editor when Replace Mode is selected (Linear Record Mode on the Transport panel):

- **None**
Nothing is replaced, even though Replace Mode is selected.
- **Controller**
Only controller data is replaced, not notes.
- **All**
Replace mode works as usual - notes and controllers are replaced when recording.

Scores (Cubase Pro only)

This page allows you to make settings for the Score Editor. Please select one of the available entries.

Scores - Colors for Additional Meanings

Here, you can specify different colors to identify non-standard elements in the score.

- Click in the **Active** column to activate this function for the respective element.
- Click in the color field to the right to specify the desired color.

Scores - Editing

Display Object Selection tool after Inserting Symbol

If this option is activated, as soon as you add a symbol, the program switches back to the Object Selection tool. If this option is deactivated, the Draw tool remains active after inserting a symbol.

Double-Click Symbol to get Draw tool

If this option is activated, you need to double-click with the Object Selection tool in a Palette to activate the Draw tool. If this option is deactivated, a single click is enough to bring out the Pencil.

Keep Crescendo Symbols “Horizontal”

If this option is activated, crescendo symbols are never “slanted”.

Keep moved Notes within Key

If this option is activated, and you move notes vertically (to transpose them), you will be restricted to pitches within the current key.

Tied Notes selected as Single Units

If this option is activated, and you click on either note in a tied note pair, both notes will be selected.

Global Staff Spacings with [Alt-Gr + Ctrl] (Win)/[Option]-[Command] (Mac)

If this option is activated, pressing **AltGr + Ctrl** on Windows or **Alt-Command** on Mac OS and adjusting the spacing of staves applies the spacing to all staves on the current page and on all the following pages. If this option is deactivated, the spacing is only applied to the current page.

Auto Layout: Don't hide first staff

This option affects the Auto Layout functions “Hide Empty Staves” and “Optimize All”. When “Don't hide first staff” is activated, staves in the very first grand staff will not be hidden, even if they are empty.

Show Braces in Edit Mode

Normally, braces are only shown in Page Mode. With this option activated they will also be visible in Edit Mode.

“Apply” closes Property Windows

Normally, when you open a Property window or any non-modal score dialog (e. g. Set Note Info or Score Settings), you can adjust the settings and click Apply to apply the changes without closing the window. If this option is activated, clicking Apply closes the window.

Show Position Cursor

If this option is activated the Project cursor position is shown as a vertical line in the score. You can click and drag the line to move the cursor or hold down **Ctrl/Cmd** and click anywhere in the score to move the cursor directly there.

Show pitch when inserting notes

If this option is activated the pitch of inserted notes is indicated.

Show Note Info by the Mouse

If this option is activated and you insert or drag a note in the score, a tooltip will appear below the pointer, showing the current pitch and position. If you feel screen redraws are too slow, you may want to turn this feature off.

Snap Slurs when dragging

If this option is activated, the endpoints of slurs will snap to notes when you draw or move them.

Unlock Layout when editing single parts

If there are more than one part on a track, and you open score edit for one of these parts, the other parts are displayed as “empty space” to preserve the layout. If this option is activated, this empty space is avoided, so you can print this single part without endless rests.

NOTE

Note that this option will erase the layout for the whole track! The next time you open the entire track, the previous layout will be overwritten with the layout settings you made for the single edited part.

Double-click on staff flips between full score/part

If this option is activated, double-clicking on a staff will switch between display of either the whole track or the current part.

NOTE

Note that in this case, the Score Settings dialog will only open if you select the “Settings...” option on the Scores menu.

Layout Tool Compatibility Mode

The behavior of the Layout tool was different in older versions of Cubase. Activate this option if you have an old project in which the Layout tool was used to ensure that the project is displayed as expected.

Hide Notes beyond limits

If this option is activated, any notes outside the Note Limits range set in the Score Settings dialog (Staff page - Options tab) will be hidden.

Computer Keyboard Note Entry: Enter Notes instantaneously

If this option is activated, you can insert notes without pressing **Return**.

Computer Keyboard Note Entry: Legato

If this option is activated, the length of the previous note is changed on inserting notes.

Computer Keyboard Note Entry: Require ALT-Key

If this option is activated, you must hold down **Alt** to insert notes.

Computer Keyboard Note Entry: Use Virtual Keyboard Keys

If this option is activated, you can insert notes by pressing the keys that correspond to the note on the virtual keyboard (qwerty).

Default Number of Bars per Staff

This is used in 2 cases:

- In Edit Mode to set how many bars are shown across the page.
- In Page Mode to decide how many bars there are shown across the page in a new layout.

NOTE

When using the Auto Layout function, you will be asked for the maximum number of bars across the page, overriding this setting.

Scores - Note Layer

If you are moving and editing notes, you might accidentally move other objects nearby. To avoid this, you can assign different types of objects to different Note Layers (up to 3) and instruct Cubase to lock one or 2 of these layers, making them unmovable.

This page is where you specify to which layer each object type belongs. The actual locking of layers is done on the extended toolbar of the Score Editor.

Transport

This page contains options related to playback, recording and positioning.

Playback Toggle triggers Local Preview

If this option is activated, you can use the **Space** on your keyboard to start/stop "local" playback of the selected file in the Sample Editor or the Pool.

When the Sample Editor is not open or when there is no audio file selected in the Pool, the **Space** still toggles the "global" project playback.

If this option is deactivated, the **Space** is used to start/stop playback of the project.

Cursor Width

Adjusts the width of the Project Cursor line.

Zoom while Locating in Time Scale

If this option is activated, you can zoom in or out by clicking in the Ruler and dragging down or up.

Return to Start Position on Stop

If this option is activated and you stop playback, the project cursor automatically returns to the position where recording or playback last started.

If this option is deactivated and you stop playback, the project cursor remains at the position where you stop playback.

If you click **Stop** again, the project cursor returns to the position where recording or playback last started.

Stop playback while winding

You can use the winding functions during playback. If this option is activated, audio playback is stopped as soon as you click **Rewind** or **Fast Forward** on the **Transport** panel.

If this option is deactivated, audio playback will continue until you release **Rewind** or **Fast Forward**.

Wind Speed Options

These options affect the fast forward/rewind speed.

- If **Adjust to Zoom** is activated, the wind speed will be adapted to the horizontal zoom factor.
If you zoom in very close for detailed editing, you probably do not want to have a high fast forward/rewind speed. Because of this, the **Speed Factor** does not have any effect in this mode. The **Fast Wind Factor** still applies though.
- If **Fixed** is activated, the wind speed will always be the same regardless of the horizontal zoom factor.
- Use the **Speed Factor** option to set the wind speed. You can set a value between 2 and 50. The higher the value, the faster the wind speed will be. If **Adjust to Zoom** is activated, this has no effect.
- Use the **Fast Wind Factor** to set the wind speed multiple for fast winding. If you press **Shift** while fast forwarding or rewinding, the wind speed will increase. The increase in speed is a multiple of the **Speed Factor**. Meaning that if you set the **Fast Wind Factor** to 2, the wind speed will be twice as fast. If you set it to 4, the wind speed will be 4 times as fast, etc. You can set a value between 2 and 50.

Show Timecode Subframes

If this option is activated, all frame based display formats (".fps" and ".dfps") will also show subframes. There are 80 subframes per frame.

User-definable Frame Rate

This is where you set the frame rate (the number of frames per second) for the Display format "User". This frame rate will then be used in every ruler for which you select the User display format.

Locate When Clicked in Empty Space

If this option is activated, you can move the Project Cursor by clicking anywhere in an "empty" area of the Project window.

Transport - Scrub

Scrub Volume

This lets you set the playback volume for the Scrub function in the Project window and audio editors.

Use High Quality Scrub Mode

When you activate this option, effects are enabled for scrubbing and the resampling quality is higher. However, scrubbing will be more demanding on the processor.

Use Inserts While Scrubbing

When you activate this option, you can activate insert effects for scrubbing with the shuttle speed control. By default, insert effects are bypassed.

VST

This page contains settings for the VST audio engine.

Default Stereo Panner Mode (Cubase Pro only)

This allows you to specify the default pan mode for inserted audio tracks (Stereo Balance Panner, Stereo Dual Panner or Stereo Combined Panner).

Connect Sends automatically for each newly created Channel

When this option is enabled, creating a new audio or group channel will automatically connect the send routing for existing FX channels. Note that this option is disabled by default to save memory resources.

Instruments use Automation Read All and Write All

If you deactivate this option, the Read and Write automation status in VST instrument panels are not affected by the "Activate/Deactivate Read for All Tracks" and "Activate/Deactivate Write for All Tracks" automation switches.

Mute Pre-Send when Mute

If this option is activated, sends set to "Pre-fader" mode will be muted if you mute their channels.

Default Send Level

This allows you to specify a default level for your send effects.

Group Channels: Mute Sources as well

By default, when you mute a group channel no audio will pass through the group. However, other channels that are routed directly to that group channel will remain unmuted. If any of those channels have cue sends routed to other group channels, FX channels or output busses, those will still be heard.

If **Group Channels: Mute Sources as well** is activated, muting a group channel will cause all other channels directly routed to it to be muted as well. Pressing mute again will unmute the group channel and all other channels directly routed to it. Channels that were muted prior to the group channel being muted will not remember their mute status and will be unmuted when the group channel is unmuted.

NOTE

Group Channels: Mute Sources as well does not affect how mute automation is written. Writing mute automation on a group channel only affects the group channel and not channels routed to it. When writing the automation you will see the other channels being muted when this option is checked. However, upon playback, only the group channel will respond to the automation.

Delay Compensation Threshold (for Recording)

Cubase features full delay compensation - any delay inherent in the VST plug-ins you use will automatically be compensated for during playback. However, when you play a VST instrument in realtime or record live audio (with monitoring through Cubase activated), this delay compensation may result in added latency. To avoid this, you can click the Constrain Delay Compensation button on the toolbar or the **Transport** zone of the **Project** window. This function tries to minimize the latency effects of the delay compensation, while maintaining the sound of the mix as far as possible.

The Delay Compensation Threshold setting is a kind of "tolerance" setting for the Constrain Delay Compensation function - only plug-ins with a delay higher than this

threshold setting will be affected by the Constrain Delay Compensation function. By default, this is set to 0.0 ms, which means that all plug-ins will be affected (e. g. turned off) when you activate Constrain Delay Compensation. If you feel that a little latency is acceptable, you can raise this threshold value.

Do not Connect Input/Output Busses When Loading External Projects

Activate this option to load external projects without automatically connecting their input and output busses to the ASIO ports of your system. If you often work with projects created on computers that have ASIO configurations different from the configurations of your own system, this option prevents unwanted audio connections.

Activate 'Link Panners' for New Tracks (Cubase Pro only)

Activate this to activate **Link Panners** by default for new tracks so that the channel sends section always mirrors the Pan settings made in the channel fader section.

Auto Monitoring

Determines how Cubase handles monitoring (listening to the input signal during recording). The following options are available:

- **Manual**
This option allows you to turn input monitoring on or off by clicking the monitor button in the track list, Inspector, or MixConsole.
- **While Record Enabled**
With this option you will hear the audio source connected to the channel input whenever the track is record-enabled.
- **While Record Running**
This option switches to input monitoring only during recording.
- **Tapemachine Style**
This option emulates standard tapemachine behavior: input monitoring in Stop mode and during recording, but not during playback.

NOTE

The automatic monitoring options apply when you are monitoring through Cubase, or when you are using ASIO Direct Monitoring. If you are monitoring externally (listening to the input signal from an external mixer, for example), select the "Manual" mode and keep all audio monitor buttons turned off in Cubase.

Warn on Processing Overloads

When you activate this option, a warning message is displayed as soon as the CPU overload indicator (on the Transport panel) lights up during recording.

VST - Plug-ins

Warn Before Removing Modified Effects

If this option is activated, a dialog will appear whenever you remove an effect plug-in for which you have made parameter changes, asking for confirmation as to whether you really want to remove the effect.

If you do not want this dialog to appear and modified effects to be removed without confirmation, leave this option deactivated.

Open Effect Editor after Loading it

If this option is activated, loading an effect or VST instrument (e. g. in one of the plug-in slots of the Send or Insert sections) will automatically open the control panel for the plug-in.

Create MIDI track when loading VSTi

This pop-up menu allows you to what specify happens when you add a VSTi in the VST Instruments window. The following options are available:

- **Always**
When this is selected, a corresponding MIDI track will always be created when you add a VST instrument.
- **Do not**
When this is selected, no MIDI track will be created when you add a VSTi in the VST Instruments window. This is the behavior from earlier versions of Cubase.
- **Always ask to**
When this is selected, you will be asked whether a corresponding MIDI track is created when you add a VSTi in the VST Instruments window.

Synchronize Plug-in Program Selection to Track Selection

If you route multiple MIDI tracks to multi-timbral instruments and activate this option, track selection and plug-in program selection are synchronized.

Suspend VST 3 plug-in processing when no audio signals are received

If this option is activated, VST plug-ins will not consume any CPU power during "silent" passages, i. e. when no audio is passing through them. This can improve system performance noticeably.

NOTE

Note however that this might lead to situations where you loaded more plug-ins in Stop mode than the system will be able to play back simultaneously. As a safety measure, try playing back the part of your project which contains the largest number of audio events to make sure that your computer system can handle the current number of VST plug-ins.

Plug-in Editors "Always on Top"

If this option is activated, the control panels for effect plug-ins and VST instruments will always be shown on top of other windows.

VST - Control Room (Cubase Pro only)

This page contains settings for the Control Room.

Show Control Room Volume in Transport Panel

If this option is activated, the Transport panel will display the Control Room Volume if the Control Room is enabled. If the Control Room is disabled, the volume of the Main Mix bus will be shown in the Transport panel.

Auto Disable Talkback Mode

Allows you to specify if Talkback is disabled during recording, during playback and recording, or not at all.

NOTE

Set the Talkback DIM level to 0 dB so as not to radically change the mix level when punching in and out of record mode.

Use Phones Channel as Preview Channel

If this option is activated, the Phones channel will be used for monitoring. If this option is deactivated, the Monitor channel in the Control Room will be used.

Dim Cue during Talkback

If this option is activated, the cue mix heard in a studio will be dimmed (by the amount set in the Talkback Dim Level field in the Control Room) for as long as the Talkback channel is used. If this option is deactivated, the cue mix level remains the same during Talkback.

Exclusive Device Ports for Monitor Channels

If this option is activated, the port assignment for Monitor channels is exclusive. If your scenario does not require you to assign ports to several Monitor channels, it is recommended to activate this option. This way you can make sure that you do not accidentally assign ports to inputs/outputs and Monitor channels at the same time.

NOTE

This setting is saved with the Control Room presets.

Reference Level

The reference level is the level that is used in calibrated mixing environments, such as film dubbing stages. Use this option to specify the reference level that can be assigned to the Control Room level.

NOTE

You can also manually adjust the reference level in the Control Room settings.

Main Dim Volume

Use this to set the amount of gain reduction applied to the Control Room channel when the DIM button is activated.

VariAudio (Cubase Pro only)

Inhibit warning when changing the Sample Data

When you are modifying audio material that is used in several places in the project in the Sample Editor, a warning message is shown. This message can be deactivated: If you activate the **Please, don't ask again** checkbox, the message will not be displayed in the future (when editing the pitch or time of audio material that is used several times in one project).

To display this message again, and thus be informed whether the audio is used in other places, deactivate this option.

Inhibit warning when applying Offline Processes

When you are applying offline processes (e. g. with the Envelope or Normalize functions) to audio material that is used in several places in the project, a warning message is shown. This message can be deactivated: If you activate the **Please, don't ask again** checkbox, the message will not be displayed in the future.

To display this message again, and thus be informed whether the audio is used in other places, deactivate this option.

Video

Extract Audio on Import Video File

If this option is activated and you import a video file, the audio data of the video is automatically extracted and saved as a separate audio clip.

Thumbnail Memory Cache Size

The value entered here determines how much memory is available for displaying thumbnails. The image of a video is buffered in the thumbnail memory cache. Whenever you move to another image and there is no memory capacity left, the "oldest" picture in the cache is replaced by the current one. If you have long video clips and/or work with a large zoom factor, you may have to raise this value.

Score Layout and Printing (Cubase Pro only)

How the Score Editor works

About this chapter

In this chapter you will learn:

- How the Score Editor and MIDI data relate.
- What Display Quantize is and how it works.

Welcome!

Welcome to scoring in Cubase! The Score Editor has been created to allow you to get any possible piece of music displayed as a score, complete with all the necessary symbols and formatting. It allows you to extract parts out of a full orchestra score, to add lyrics and comments, create lead sheets, score for drums, create tablature, etc. In other words: just about any type of notation you could ever desire!

There are a few basic principles to how the Score Editor works, which you have to understand to make full use of it.

How the Score Editor operates

The Score Editor does the following:

- Reads the MIDI notes in the MIDI parts.
- Looks at the settings you have made.
- Decides how the MIDI notes are displayed according to the settings.

The Score Editor takes MIDI data and settings as input and produces a score as output.

The Score Editor does all this in realtime. If you change some of the MIDI data (for example by moving or shortening a note) this is immediately reflected in the score. If you change some of the settings (for example the time signature or key signature) this is also immediately apparent.

Do not think of the Score Editor as a drawing program, but rather as an “interpreter” of MIDI data.

MIDI notes vs. score notes

MIDI tracks in Cubase hold MIDI notes and other MIDI data. As you may know, a MIDI note in Cubase is only defined by its position, length, pitch and velocity. This is not nearly enough information to decide how the note is to be displayed in a score. The program needs to know more: What type of instrument are we talking about, Drums? Piano? What key is the piece in? What is the basic rhythm? How should the notes be grouped under beams? You provide this information by making settings and working with the tools available in the Score Editor.

An example of the MIDI/score relationship

When Cubase stores a MIDI note's position, it makes the measurement in an absolute value, called ticks. There are 480 ticks to a quarter note. Have a look at the example below:



A quarter note at the end of a 4/4 measure

The note is on the fourth beat of the measure. Now, let's say you change the time signature to 3/4. This shortens the length of a "measure" to only three quarter notes – 1440 ticks. Suddenly our quarter note is in the next measure:



The same note in 3/4

Why? Since you are not changing the MIDI data in the track/part (that would ruin your recording!) by changing the time signature, the note is still at the same absolute position. It is just that now each "measure" is shorter, which effectively moves the note in the score.

What we are trying to get across here is that the Score Editor is an "interpreter" of the MIDI data. It follows rules that you set up by making settings in dialogs, on menus, etc. And this interpretation is "dynamic", or in other words, it is constantly updated whenever the data (the MIDI notes) or the rules (the score settings) change.

Display Quantize

Let's say you used the Project window to record a figure with some staccato eighth notes. When you open the Score Editor, these notes are displayed like this:



This does not look anything like what you intended. Let's start with the timing – obviously, you were off at a couple of places (the third, fourth and last note all seem to be a 32nd note late). You can solve this by quantizing the figure, but this would make the passage sound too "stiff", and not fit in the musical context. To resolve this problem the Score Editor employs something called "Display Quantize".

Display Quantize is a setting which is used to tell the program two things:

- How precise the Score Editor is to be when displaying the note positions.
- The smallest note values (lengths) you want displayed in the score.

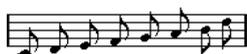
In the example above, the Display Quantize value seems to be set to 32nd notes (or a smaller note value).

Let's say we change the Display Quantize value to sixteenth notes in the example:



With Display Quantize set to sixteenth notes

OK, now the timing looks right, but the notes still do not look like what you intended. Maybe you can understand that from a computer's point of view, you did play sixteenth notes, which is why there are a lot of pauses. But that's not how you meant it. You still want the track to play back short notes, because it is a staccato part, but you want something else "displayed". Try setting the Display Quantize value to eighth notes instead:



With Display Quantize set to eighth notes

Now we have eighth notes, as we wanted. All we have to do now is to add staccato articulation which can be done with one simple mouse click using the Draw tool or using musical articulations.

How did this work? By setting the Display Quantize value to eighth notes, you give the program two instructions that would sound something like this in English: "Display all notes as if they were on exact eighth note positions, regardless of their actual positions" and "Don't display any notes smaller than eighth notes, regardless of how short they are". Please note that we used the word "display", which leads us to one of the most important messages of this chapter:

IMPORTANT

Setting a Display Quantize value does not alter the MIDI notes of your recording in any way, as regular quantizing does. It only affects how the notes are displayed in the Score Editor (and nowhere else)!

RELATED LINKS

[Working with symbols](#) on page 1124

[Expression maps \(Cubase Pro only\)](#) on page 760

Choose your Display Quantize values with care

As explained above, the Display Quantize value for notes puts a restriction on the smallest note value that can be displayed. Let's see what happens if we set it to quarter notes:



With Display Quantize set to quarter notes

Oops, this doesn't look too good. Well of course it doesn't! We have now instructed the program that the "smallest" note that occurs in the piece is a quarter note. We have explicitly told it that there are no eighth notes, no sixteenths, etc. So when the program draws the score on screen (and on paper) it quantizes the display of all our eighth notes to quarter note positions, which makes it look like above. But again, please note that when you hit Play, the passage still plays as it originally did. The Display Quantize setting only affects the score image of the recording.

IMPORTANT

Even if you manually enter notes in the score using perfect note values, it is very important that you have your Display Quantize settings right! These values are not just used for MIDI recordings! If you for example set the Display Quantize value for notes to quarter notes and start clicking in eighth notes, you get eighth notes in the track (as MIDI data), but still only quarter notes in the display!

Using Rests as Display Quantize setting

Above we used Display Quantize for notes. There is a similar Display Quantize setting called "Rests" which is used to set the smallest rest to be displayed. Often, this setting is very effective.

Let's start with the following note example:



As you see, the first note appears one sixteenth note late. If we change the Display Quantize value for notes to eighth notes, the score is displayed like this:



With Display Quantize: Notes set to eighth notes

Unfortunately, this moves the first note to the same position as the second, since sixteenth note positions are not allowed. We can solve this by inserting extra Display Quantize values within the bar with the Display Quantize tool, but there is a much easier way: Change the Display Quantize value for notes back to sixteenths, but set the value for rests to eighth notes! This tells the program not to display any rests smaller than eighth notes, except when necessary. The result looks like this:



With Display Quantize: Notes set to sixteenth notes, but Rests set to eighth notes.

How did this work? Well, you instructed the program not to display any rests smaller than eighth notes, except when “necessary”. Since the first note appeared on the second sixteenth note position, it was necessary to put a sixteenth rest at the beginning of the figure. All other rests can be hidden by displaying the notes as eighth notes, and were therefore not “necessary”.

This leads us to the following general guidelines:

- Set the Notes value according to the “smallest note position” you want to be shown in the score (e. g. if you have notes on odd sixteenth note positions, set the Notes to sixteenth notes).
- Set the Rests value according to the smallest note value (length) you want to be displayed for a single note, positioned on a beat.
Common Display Quantize settings would be to have Notes set to 16 (sixteenth notes) and Rests set to 4 (quarter notes).

RELATED LINKS

[Inserting Display Quantize changes](#) on page 1056

Handling exceptions

Unfortunately, the guidelines above do not work perfectly in every situation. You may for example have a mix of straight notes and triplets of different types, or you may want to display equally long notes with different note values depending on the context. There are several methods you can try:

Automatic Display Quantize

If your score contains both straight notes and triplets, you can use Auto Quantize. If this option is activated, Cubase tries to “understand” whether the notes should be display quantized to straight notes or triplets.

RELATED LINKS

[If your music contains mixed straight notes and triplets](#) on page 1084

Using the Display Quantize tool

With the “Q” tool, you can insert new Display Quantize values anywhere in the score. Inserted Display Quantize values affect the staff from the insertion point onwards.

RELATED LINKS

[Inserting Display Quantize changes](#) on page 1056

Permanent alteration of MIDI data

As a last resort, you can resize, quantize or move the actual note events. However, this would result in the music not playing back like it originally did. Often it is possible to get the score to look the way you want without altering any MIDI data.

Summary

This closes our discussion on the basic concept of display quantizing. There are a number of other special situations which require more advanced techniques described in the next chapters. The interpretation options which work along the same lines as Display Quantize are also explained.

Entering notes by hand vs. recording notes

Sometimes you enter and edit notes by hand (or rather using the mouse and/or the computer keyboard) and at other times you record them from a MIDI keyboard. Most of the time, you do a combination of both. In real life, even if you have recorded the piece perfectly, you often have to do some permanent editing to your recording before printing.

RELATED LINKS

[Transcribing MIDI recordings](#) on page 1054

[Entering and editing notes](#) on page 1060

The basics

About this chapter

In this chapter you will learn:

- How to open the Score Editor.
- How to switch between Page Mode and Edit Mode.
- How to set up the page size and margins.
- How to hide and show the Symbols Inspector, the toolbar, and the extended toolbar.
- How to set up the ruler.
- How to set a zoom factor.
- How to make initial settings for clef, key, and time signature.
- How to transpose instruments.
- How to print and export your score.

Preparations

PROCEDURE

1. In the Project window, create a MIDI track for each instrument.
You can prepare a piano (split) staff from a single track, i. e. there is no need to create one track for the bass clef and one for the treble clef.
 2. Name each track after the instrument.
This name can later be used in the score if you like.
 3. Record on the tracks or create empty parts on all tracks.
You can make very long parts that cover the entire project, or you can start out with shorter parts to begin with. If you choose the latter option, you can always go back later and add new parts or copy existing parts.
-

Opening the Score Editor

Editing one or several parts

To open one or several parts in the Score Editor, select the parts (on the same or on different tracks) and select “Open Score Editor” from the MIDI menu or from the Scores menu. The default key command for this is **Ctrl/Cmd-R**.

- You can also select the Score Editor as your default editor, allowing you to open it by double-clicking parts.

This is done with the Default MIDI Editor pop-up menu in the Preferences dialog (Editors page).

Editing whole tracks

When preparing a score for printing, you probably want to open whole MIDI tracks in the Score Editor. To do this, select the track(s) in the track list and make sure no parts are selected – then open the Score Editor as described above.

Editing parts on different tracks

If you have selected parts on two or more tracks (or several entire tracks – no parts) and open the Score Editor, you get one staff for each track (although you can split a staff in two, e. g. when scoring for piano). Think of the Project window as an overview of your entire score and the tracks as representing one instrument each.

Editing predefined combinations of tracks

You can open the Score Editor for a certain combination of tracks that you edited before.

RELATED LINKS

[Layout operations](#) on page 1177

Displaying single voices or the complete score

If the Double-click on staff flips between full score/part option is activated in the Preferences dialog (Scores–Editing page), double-clicking on the rectangle to the left of a staff switches between display of either the whole score or the current voice.

The project cursor

The project cursor appears as a vertical line across the staff. When you open the Score Editor, the view is automatically scrolled so that the project cursor is visible in the window. This means you do not always see the beginning of the edited part when you first open the Score Editor.

- Hold down **Alt** and **Shift** and click anywhere in the score to move the project cursor there. This is handy when the project cursor is not visible. This is not possible if Computer Keyboard Input mode is activated.

RELATED LINKS

[Entering notes using the computer keyboard](#) on page 1064

Playing back and recording

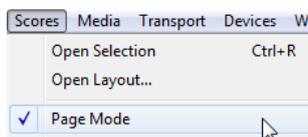
You can play back and record MIDI in the Score Editor using the standard transport commands, just like in the other MIDI editors.

RELATED LINKS

[MIDI Editors](#) on page 671

Page Mode

When you are preparing a score for printout, you should set the Score Editor to Page Mode. This is done by selecting Page Mode from the Scores menu. If Page Mode is activated, a checkmark appears next to this menu option.



In Page mode, the window switches to display one page at a time, as it appears on printout.

Page Mode vs. Edit Mode

If Page Mode is not activated, the Score Editor is in Edit Mode. All you can do in Edit Mode, you can also do in Page Mode. But Page Mode offers lots of additional features which are directly related to how the score is displayed and printed.

IMPORTANT

This section of the manual assumes you are in Page Mode. It is mentioned explicitly if something in this text specifically relates to Edit Mode.

Changing the Background in Page Mode

In Page Mode, you can specify different background textures for the score by selecting an option from the Background Texture pop-up menu on the toolbar.

NOTE

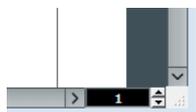
The background texture only affects the display and is not used for printing.

Using the scrollbars in Page Mode

In Page Mode, the scrollbars are used to scroll the image of the page inside the window.

Moving between pages in Page Mode

If your score takes up more than one page, you use the page number indicator in the lower right corner to move to another page in your score. The number can be adjusted using the standard editing techniques.



The page number indicator – adjust it to move to another page.

Also, if Auto-Scroll is activated on the toolbar, the score display follows the project cursor position. This way you can scroll the score by using fast forward or rewind.

Editing individual parts in Page Mode

When you view a single part in Page Mode, the bars before and after the part is normally shown as empty measures in the Score Editor. This is to preserve the layout of the track, i. e. the spacing between staves and bar lines, number of bars per staff, etc.

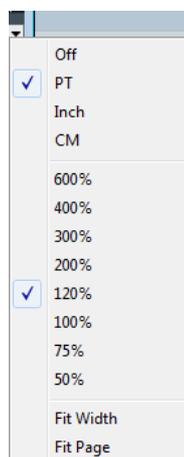
If you want to view and print a single part, without any surrounding empty bars, activate the “Unlock Layout when editing single parts” option in the Preferences dialog (Scores–Editing page). Note, however, that if you adjust the layout when editing the part in this mode, this erases the layout for the whole track!

Changing the zoom factor

There are two ways to change the zoom in Page Mode: by setting a zoom factor on the zoom pop-up menu or by using the Zoom tool (magnifying glass).

Using the Zoom pop-up menu

Above the vertical scrollbar to the right you can find a pop-up menu allowing you to set the zoom factor.



By zooming in you can make detailed adjustments to symbols, etc. By zooming out you get a better overview.

- If you select “Fit Page”, the zoom factor is adjusted according to the window size so that the whole page becomes visible.
- If you select “Fit Width”, the zoom factor is adjusted according to the window width so that the full width of the page becomes visible.

NOTE

This pop-up menu can also be opened by right-clicking in the ruler.

Using the Zoom tool

The Zoom tool in the Score Editor works much like in the Project window:

- Click once with the Zoom tool to zoom in one step.
- Hold down **Alt** and click once with the Zoom tool to zoom out one step.
- Drag a rectangle with the Zoom tool to set a custom zoom factor.
The section encompassed by the rectangle is zoomed to fill the window.

- Hold down a modifier key and right-click with the Zoom tool to open the Zoom context menu, and select the desired Zoom setting.

Using the Mouse wheel

You can also zoom by holding down **Ctrl/Cmd** and moving the mouse wheel. The mouse position is kept (if possible) when zooming in or out.

The active staff

One thing to note when you are working with multiple staves is the “active” staff. Only one staff at a time can be active, and it is indicated by a rectangle to the left of the clef symbol.



This staff is active.

NOTE

To make a staff active, click anywhere on it. By default, you can also use the **Up Arrow** and **Down Arrow** keys to step between staves.

Making page setup settings

Before preparing the score for printout, you have to make some page settings for your project. This does not have to be the first thing you do, but it is a good working habit, because it also affects the on-screen display of the score.

PROCEDURE

1. On the File menu, select Page Setup.
The Page Setup dialog appears. This is the regular operation system Page Setup dialog, described in detail in your system's documentation. The only things that Cubase adds to this are the margin settings.
 2. Select the preferred printer, paper size, orientation, etc.
 3. If you need to, change the margins by setting the left, right, top and bottom settings.
To make the settings permanent, save the project.
If you want new projects to always start with certain page setup settings, you can create project templates.
-

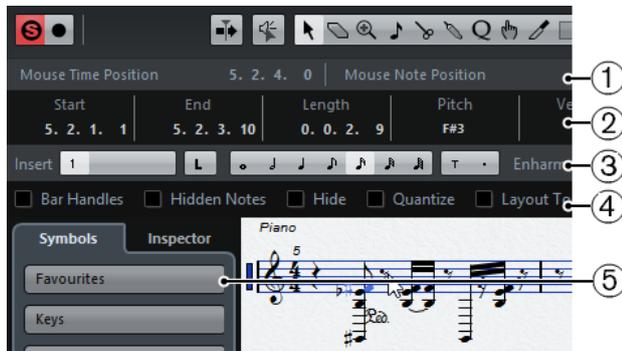
RELATED LINKS

[Saving a Project Template File](#) on page 87

Designing your work space

You can design your work space according to your needs by showing/hiding different areas using the Window Layout function and by showing/hiding different options of these areas using the Setup options dialogs. Which areas and options to show or hide depends on what kind of project you are working on, how large your monitor is, and so on.

Window layout

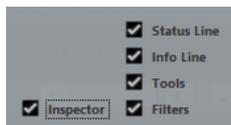


1. Status line
2. Info line
3. Extended toolbar
4. Filter bar
5. Symbols Inspector

Configuring the window layout

PROCEDURE

1. On the toolbar, click the "Set up Window Layout" button.



2. Activate the desired options.
-

The status line

The status line features the Mouse Time and the Mouse Note Position displays as well as the Current Chord Display, which helps you identify chords in the Score Editor note display. It can be hidden/displayed using the "Status Line" option in the "Set up Window Layout" pane.

The status line has its own Setup dialog where you can specify exactly which properties you want to see.

- Right-click on the status line and select "Setup..." from the context menu. In the dialog that appears you can configure where the separate items will be placed and save/recall different setup configurations.

The info line

The info line displays information about the selected note. It can be shown and hidden using the “Info Line” option in the “Set up Window Layout” pane.

The info line has its own setup dialog where you can specify exactly which properties are shown.

- Right-click on the info line and select “Setup...” from the context menu.
In the dialog that appears you can configure where the separate items will be placed and save/recall different setup configurations.

The extended toolbar

The extended toolbar contains additional tools for your score. It can be hidden/displayed using the Tools option in the “Set up Window Layout” pane.

The filter bar

This area contains checkboxes determining which indicators, handles, and other non-printed elements are shown in the score. It can be hidden/displayed using the Filters option in the “Set up Window Layout” pane.

Showing and hiding elements

Some of the elements in the score are not printed, but rather serve as indicators for layout changes, handles, etc. These elements can be hidden or shown in any combination by using the Filters options.

The following options are available:

Bar Handles

Displays the bar handles, used for copying bars.

Hidden Notes

Displays any notes you might have hidden.

Hide

Displays markers in the score for each hidden element (except notes).

Quantize

Displays markers in the score where you have made Display Quantize “exceptions”.

Layout Tool

Displays markers in the score where you have made adjustments with the Layout tool.

Grouping

Displays markers in the score where you have made beam groupings.

Cutflag

Displays markers in the score where you have inserted cutflag events.

Split Rests

Displays markers in the score wherever you have split multiple rests.

Stems/Beams

Displays markers in the score where you have made any stem or beam adjustments.

RELATED LINKS

[Moving and duplicating with the bar handles](#) on page 1143

[Hiding/showing objects](#) on page 1188

[Inserting Display Quantize changes](#) on page 1056

[Graphic moving of notes](#) on page 1118

[Grouping](#) on page 1110

[The Cut Notes tool](#) on page 1117

[Splitting multi-rests](#) on page 1190

[Setting stem direction](#) on page 1102

[Manual adjustment of beams](#) on page 1115

The Symbols Inspector

This area contains symbol sections, which are used to add symbols to the score. It can be hidden/displayed using the Symbols option in the “Set up Window Layout” pane.

The symbol sections can also be opened as free-floating palettes by opening them, right-clicking any of the buttons and selecting “Open as Palette” from the context menu. This way you can move symbol palettes around on the screen by clicking and dragging their title bars. Right-clicking on a symbol palette brings up a pop-up menu:

- Select “Toggle” to switch between a vertical or horizontal view of the palette.
- Select one of the options on the pop-up menu to bring up the corresponding palette instead of the current palette.
- Hold down **Ctrl/Cmd** and select a palette from the pop-up menu to open the selected palette in a new window (without closing the existing one).
- Click the close button to close a symbol palette.

In the Symbols Inspector setup dialog you can specify exactly which symbol sections are shown.

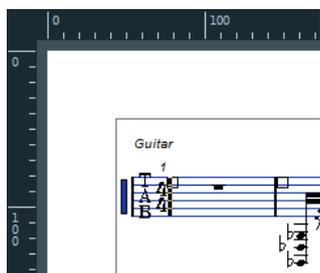
RELATED LINKS

[The Symbols Inspector Setup dialog](#) on page 1126

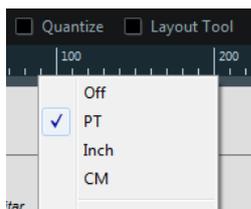
[Working with symbols](#) on page 1124

The ruler

In the Score Editor there are no meter/time position rulers as in the other editors. Instead, there are horizontal and vertical “graphic rulers” in Page Mode. These help you to position symbols and graphical objects in the score.



- To specify which units to show on the rulers, open the Zoom pop-up menu and select one of the options.
You can choose between points, inches, and centimeters.



- To hide the rulers, select “Off” from the pop-up menu.

The Position Info window

To help you when positioning objects in the score, the Page Mode has a special Position Info window, in which you can view and adjust object positions numerically, in the unit selected for the ruler. To display the Position Info window, click in the ruler.

Measure in CM	Rel.Pos	Sel.Staff: 0cm
X:3.4cm	dX:----	To Prev.Staff:----
Y:-1.29cm	dY:----	To Next.Staff:----

About the Score Editor context menus

Many functions and settings of the Score Editor can be accessed via context menus, opened by right-clicking on certain elements of the score. For example, if you choose a note, the note context menu opens, listing note-related functions.

If you open the context menu on an empty area of the score, it lists all available tools (allowing you to quickly switch between tools) and it contains many functions of the main menus.

About dialogs in the Score Editor

There are two types of dialogs available in the Score Editor:

- Non-modal dialogs can remain open while you continue working in the score.
In a non-modal dialog, clicking the Apply button applies the settings in the dialog to the selected objects in the score. This means you can select different elements in the score and change their settings, without having to close the dialog in between.
The dialog is closed by clicking the standard close button in the window title bar. The Score Settings dialog is an example for a non-modal dialog.
- Regular dialogs have an OK button instead of an Apply button.
Clicking OK applies the settings you have made and closes the dialog. You cannot continue working in the score (or select other objects) until you close the dialog.

NOTE

If the “Apply closes Property Windows” option is activated in the Preferences dialog (Scores-Editing page), clicking the Apply button in a non-modal dialog closes the dialog. In other words, this makes a non-modal dialog work a bit more like a regular dialog.

Setting clef, key, and time signature

When preparing to enter notes into a score, you probably want to start out by setting the desired clef, key, and time signature for the staff. The text below assumes you are working on one track

only. If you have multiple staves, you either make this setting independently for each staff or for all staves at once.

Normally, all these symbols appear at the beginning of each staff. However, you can control this by using the Real Book option and by hiding objects.

When entering or editing keys, there is one important thing to note:

IMPORTANT

In the Score Settings dialog on the Project–Notation Style subpage (Keys category) you can find the “Key Changes for the entire Project” option. If this option is activated, all changes made to the key always affect every staff in the project, i. e. it is not possible to define different keys for different staves.

RELATED LINKS

[Staff settings](#) on page 1080

[Real Book](#) on page 1187

[Hiding/showing objects](#) on page 1188

Using the Symbols Inspector to set the initial clef, key, and time signature

PROCEDURE

1. Click the “Set up Window Layout” button on the toolbar and activate the Symbols option. The Symbols Inspector is displayed.
2. Open the Clefs section of the Inspector and click on the symbol for the clef that you want to use in your score.
3. Click anywhere in the first bar of the staff to set the clef for this track.
4. Open the Keys section and click on the symbol for the key that you want to use.
5. Click anywhere in the first bar of the staff to set the key for the track.



6. Open the Time Signature section of the Inspector and click on the symbol for the time signature value that you want to use.
If you cannot find the desired time signature, you can use the Edit Time Signature dialog (see below).

AFTER COMPLETING THIS TASK

The settings you have made so far are valid for the entire track. If you want to further edit these settings, or if you need different settings for different bars of your track, proceed as described in the next section.

Editing the time signature

PROCEDURE

1. Double-click on the time signature symbol at the beginning of the staff.
A dialog opens.



2. If the project is in 4/4 or 2/2, you can select common time/cut time directly by clicking one of the two symbols on the right.
This sets the time signature to 4/4 or 2/2, respectively and also inserts a common/cut time symbol on the staff.
3. If the project is in any other time, set the numerator and denominator above and below the line, respectively.
The numerator can consist of several numbers for composite time signatures. However, if the project is in a simple time signature you only need to fill in the first number above the line. The more advanced options are described below.
4. Click OK or press **Return**.

IMPORTANT

All tracks share the time signature! In other words, when you set the time signature, you do this for all tracks in the project.

If you need to enter half a bar somewhere (for example) you have to make a time signature change (e. g. from 4/4 to 2/4 and back again).

RELATED LINKS

[By using the Pickup Bar feature](#) on page 1192

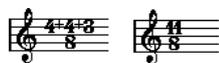
[Inserting and editing clefs, keys, or time signatures](#) on page 1077

Composite time signatures and the For Grouping Only option

For composite signatures, the numerator can be made up of up to four groups. For example, "4+4+3+" on the upper line and 8 on the lower means the time signature is 11/8.

The reason for dividing the numerator into several numbers is to get beaming and tied notes displayed correctly automatically. This does not affect the metronome or anything else, only beams and ties.

If "For Grouping Only" is not activated, the numerator shows all the numbers entered. If it is activated, it shows the sum of the numbers entered, as for "simple" time signatures.



"For Grouping Only" off and on

Note that Cubase tries to preserve the denominator when you insert a composite signature with "For Grouping Only" activated. This means that if you have a 4/4 time signature, and change it to a composite value (3+3+2 eighths for example), the time signature still is displayed as 4/4 instead of 8/8.

RELATED LINKS

[Handling beaming](#) on page 1110

Setting the time signature on the Transport panel



You can also set the time signature directly on the Transport panel. Please note that you cannot create composite time signatures from the Transport panel.

Setting the time signature using the signature track/Tempo Track Editor

You can also add, edit and delete time signatures using the signature track or the Tempo Track Editor.

Please note the following:

- The score always shows the time signature events set in the signature track/Tempo Track Editor, regardless of whether or not the Tempo button is activated. Likewise, any time signatures you create in the Score Editor are shown in the signature track/Tempo Track Editor.
- You cannot create composite time signatures using the signature track/Tempo Track Editor.

RELATED LINKS

[Editing Tempo and Time Signature](#) on page 863

Editing the clef

On the clef context menu

When you right-click on a clef symbol, a context menu with a list of all available clefs opens. This menu also contains the following options:

- **Display Clef Changes as Small Symbols**
If you activate this option and insert a clef change in the score, the clef is displayed with a smaller symbol.
- **Warnings for new Clefs at Line Breaks**
If you activate this option and insert a new clef at a line break, the Clef change symbol is inserted in the last bar before the staff break. If this option is deactivated, the symbol is inserted in the first bar of the next staff line.
- **Hide**
If you select this function, the clef is hidden.
- **Properties**
If you select this function, the Edit Clef dialog opens.

In the Edit Clef dialog

PROCEDURE

1. Double-click on the current clef.
A dialog appears.



2. Use the scrollbar to select a clef.

IMPORTANT

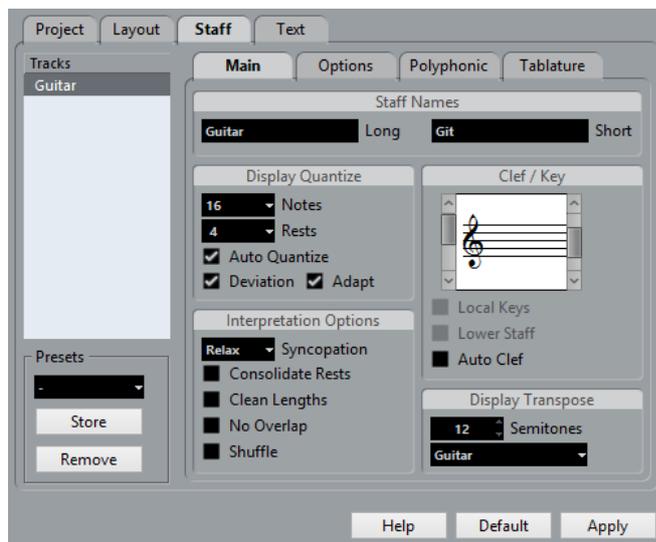
This does not work if Auto Clef is activated on the Staff page of the Score Settings dialog, see below.

3. Repeat the steps above for all staves in the system.
-

On the Staff page of the Score Settings dialog

PROCEDURE

1. Click on a staff to make it the active staff.
2. On the Scores menu, select “Settings...” to open the Score Settings dialog. Select the Staff page at the top to open the Main tab, showing the current settings for the active staff.
You can also double-click to the left of a staff to make it active and bring up the Score Settings dialog in one go (if this does not work, the “Double-click on staff flips between full score/part” option in the Preferences dialog (Scores–Editing page) may be activated).



3. In the Clef/Key section, use the scrollbar on the left to select one of the available clefs.
4. Click Apply.

NOTE

You can select another staff in the score and make settings for it without having to close the Score Settings dialog first.

RELATED LINKS

[Displaying single voices or the complete score](#) on page 1036
[Inserting and editing clefs, keys, or time signatures](#) on page 1077

In a split system

If you have a split system you can set different clefs for the upper and lower staff.

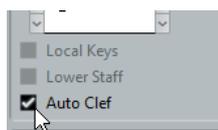
PROCEDURE

1. Open the Score Settings dialog on the Staff page.
 2. Select a clef for the upper staff.
 3. Activate the “Lower Staff” checkbox.
 4. Set a clef for the lower staff.
-

RELATED LINKS

[Split \(piano\) staves](#) on page 1075
[Strategies: How many voices do I need?](#) on page 1093

Using Auto Clef



On the Staff page of the Score Settings dialog you also find the Auto Clef option. If this option is activated, the program automatically selects a treble clef or a bass clef for the staff, depending on the range of the notes in the part.

Editing the key

IMPORTANT

In the Score Settings dialog on the Project-Notation Style subpage (Keys category), you can find the “Key Changes for the entire Project” option. If this option is activated, all changes made to the key always affect every staff in the project, i. e. it is impossible to define different keys for different staves (other than the relative display transpose settings for instruments made on the Staff page). Furthermore, on the Staff page, any staff (e. g. a drum staff) can be set to not show key signatures.

Therefore, when you want to edit the key, decide if you want the key change to apply to the entire project, or if you want to use different keys on different staves:

- If the key set at the beginning of the track is to be used on all staves, and if any subsequent key changes are also valid for all staves, then leave the “Key Changes for the entire Project” option activated.
- If you want to use different keys on different staves, make sure that the “Key Changes for the entire Project” option is deactivated.

On the key context menu

When you right-click on a key symbol, a context menu with a list of all available keys opens. This menu also contains the following options:

- Key Changes for the entire Project
If this option is activated, all changes made to the key always affects the entire project, so that it is not possible to define different keys for different staves.
- Hide
If you select this, the key is hidden.
- Properties
If you select this, the Edit Key dialog opens.

In the Edit Key dialog

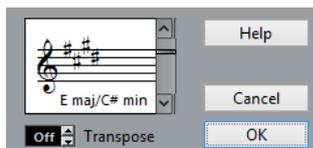
If the current key is anything but C major/A minor (no accidentals), you can set the key directly in the score:

PROCEDURE

1. Double-click on the accidentals at the beginning of a staff.
The “Edit Key” dialog opens.



Double-click here...



...to open the Edit Key dialog.

2. Use the scrollbar to select a key and click OK.
-

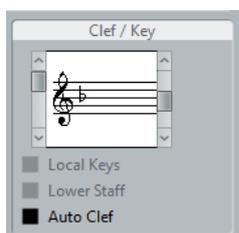
RELATED LINKS

[Transposing instruments](#) on page 1050

On the Staff page of the Score Settings dialog

PROCEDURE

1. Make the desired staff active, open the Score Settings dialog and select the Staff page.



The Clef/Key section on the Staff page

2. Use the right scrollbar in the Clef/Key section to select the desired key.
3. Click Apply.

NOTE

You can select other staves in the score and make settings for these, without having to close the Score Settings dialog.

Setting the key for a split system

If you have a split system with two staves you can set different keys for the upper and lower staff.

PROCEDURE

1. Click in the system to make one of its staves the active staff.
 2. Open the Score Settings dialog on the Staff page.
 3. Set a key for the upper staff.
This automatically sets the lower staff to the same key.
 4. If you need to set a different key for the lower staff, activate the "Lower Staff" checkbox and set a key for this.
-

RELATED LINKS

[Split \(piano\) staves](#) on page 1075

[Strategies: How many voices do I need?](#) on page 1093

Setting a local key

You can also set a different key for the selected staff only. This is useful for instruments like oboe and English horn that change display transpose and therefore also the key.

PROCEDURE

1. Make the desired staff active, open the Score Settings dialog and select the Staff page.
2. Activate the “Local Keys” option on the Main subpage in the Clef/Key section.

NOTE

This option is only available if “Key Changes for entire Project” is activated in the Score Settings dialog, on the Project–Notation Style subpage (Keys category).

-
3. Use the scrollbar to the right to set the desired key.
 4. Click Apply to set the selected key for the staff.
-

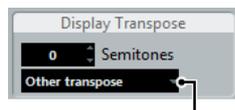
Transposing instruments

Scores for some instruments, for example a lot of brass instruments, are written transposed. Therefore, the Score Editor provides a Display Transpose function. With this function notes are transposed in the score without affecting the way they are played back. This allows you to record and play back a multi-staff arrangement, and still score each instrument according to its own transposition.

Setting Display Transpose

PROCEDURE

1. Make the desired staff active, open the Score Settings dialog and select the Staff page.
2. In the Display Transpose section, select your instrument from the Transpose pop-up menu or adjust the value directly in the Semitones field.



Transpose pop-up menu

3. Click Apply.

IMPORTANT

Display Transpose does not affect MIDI playback!

Display Transpose in the Edit Key dialog

If you want to change the Display Transpose setting in the middle of the score, you can do this by inserting a key change. In the Edit Key dialog, which is opened by double-clicking a key symbol, you can find a Transpose field, in which you can enter a transposition value in semitones. This is useful if you are for example writing a saxophone part and want the player to switch from alto to tenor saxophone.

NOTE

Note that you enter an absolute Display Transpose value that is used from this point on. In other words, this setting is not relative to any Display Transpose settings you made on the Staff page of the Score Settings dialog.

RELATED LINKS

[Inserting and editing clefs, keys, or time signatures](#) on page 1077

Disabling Display Transpose

You can also disable Display Transpose by deactivating the “Display Transpose” button on the Score Editor toolbar. This can be useful if you work with transposing instruments and want to show the concert key and not the scored key.



Printing from the Score Editor

When you have made all necessary changes to the score display and are satisfied with the result, you can go ahead and print your score, e. g. to hand out note sheets.

PROCEDURE

1. On the Scores menu, activate “Page Mode”.
Printing is only possible from within Page Mode.
2. Select Page Setup from the File menu and make sure all your printer settings are correct. Close the dialog.

IMPORTANT

If you change your setting for paper size, scale, and margins now, the score may change its look.

3. Select Print from the File menu.
 4. A standard print dialog appears. Fill out the options as desired.
 5. Click Print.
-

Exporting pages as image files

You can export a section of a page or a complete page in various file formats. This allows you to import your scores into desktop publishing and drawing applications.

Selecting a section of a page for exporting

If you only want to export a part of a certain page, proceed as follows:

PROCEDURE

1. Make sure that you are in Page Mode.
2. Select the Export tool (“Select Export Range”).
The pointer turns into a cross-hair cursor.
3. Drag over the section of the score you want to include.
The area is indicated by a rectangle
 - You can adjust the size of the rectangle by clicking and dragging its handles with the Object Selection tool.
 - You can move the rectangle to another position in the score by clicking and dragging.

To export the selected range, you have two possibilities:

- Double-click inside the rectangle while it is selected.
This opens the Export Scores dialog, where you can make settings for the file to be created (see below).
 - Use the Export Scores function, see below.
-

Exporting

To export the score, proceed as follows:

PROCEDURE

1. Make sure that you are in Page Mode.
 2. Select the page that you want to export.
 3. Open the File menu, open the Export submenu and select "Export Scores...".
The Export Scores dialog appears.
 4. Select a picture format.
 5. Specify a resolution for the file.
This determines the accuracy with which the image is created. 300 dpi, for example, is the resolution many laser printers use for printing. If the image file is only displayed on screen in other programs, select 72 or 96 (depending on screen resolution) and it has the same size as it had in Cubase.
 6. Specify name and location for the file and click Save.
The page of the score is exported and saved as a file. It can now be imported into any program supporting the selected file format.
-

Working order

When you prepare a score, we suggest you do things in the following order, since this minimizes the time needed if you make a mistake somewhere and need to redo a step.

- Preferably work on copies of recorded tracks.
If the parts are fairly complex you might have to change them permanently, after which they do not play back as they originally did.
- If memory is an issue, break the score up into segments.
You might for example use the Split Loop function from the Functions submenu on the Edit menu to split the parts across all tracks.
- Arrange the tracks in the Project window in the order you want them displayed in the score.
You cannot rearrange the order of systems in the Score Editor. However, you can go back and change the order in the Project window at any time.
- When opening the Score Editor, begin with the adjustments described above.
You should always begin by setting page margins, etc.
- If you have recorded music into tracks already, try adjusting the graphic display of the score as much as possible without permanently editing the notes.
Use the Score Settings, Display Quantize, Grouping, etc.
- If the tracks are empty, make basic staff settings, enter the notes and then make detailed adjustments, add Display Quantize, etc.
- If needed, use polyphonic voicing to resolve overlapping notes, create piano systems, handle crossing voices, etc.

- When all this is done, decide if you need to perform “destructive” editing. You might for example have to permanently alter the length or position of some of the recorded notes.
- Hide unwanted objects and add note-dependent and note-related symbols. This includes accents, dynamic symbols, crescendo, slurs, lyrics, “graphic rests”, etc.
- Work through the score and adjust the number of bars across the page.
- Adjust the vertical spacing between staves and grand staves. The last two steps can be performed automatically by the program using the Auto Layout features.
- Add layout symbols like endings, page text, etc.
- Print or export the score.
- Go back and create alternative layouts, e. g. to extract voices.

Force update

If for some reason the screen is not redrawn properly (as a result of the computer’s recalculation of the appearance of the page), you can select “Force Update” from the Functions submenu on the Scores menu or click the Force Update button on the extended toolbar. This forces a redraw of the whole page.



Transcribing MIDI recordings

About this chapter

In this chapter you will learn:

- How to prepare your parts for score printouts.
- How to use the Display Quantize tool to handle “exceptions” in the score.
- How to resolve parts that contain mixed notes and triplets.

About transcription

This chapter assumes you have a MIDI recording that you want to transform into a printable score. However, if the parts are fairly complicated, you probably need to perform some manual editing of the notes.

IMPORTANT

Before starting, make sure that you understand the basic principles behind the score notes/MIDI notes relationship and also what Display Quantize is.

RELATED LINKS

[Entering and editing notes](#) on page 1060

[How the Score Editor works](#) on page 1030

Getting the parts ready

PROCEDURE

1. Record the music.
You must definitely play in time with the click.
2. Play back to check that the music was recorded as intended.
If not, you might need to re-record or perform some editing.
3. Decide how much permanent alteration to the recording you can accept to make the score look good.
If the answer is “none”, you should prepare your score from a copy of the track. See the section below.
4. Select all parts (on all tracks) that you want to work on.
5. Open the Score Editor.
6. Activate Page Mode.

Preparing parts for score printout

Below follow a few tips to note when preparing a score for printout:

- If a part is complex, you may have to do some manual editing of notes, like moving them or changing their lengths. This means that the recording does not play back exactly as it originally did. If this is a problem, we suggest you work on a copy of the recording. Use the Duplicate Track function on the Project menu to create a version of the track for scoring. Rename the track and mute the original track while you are preparing the score. You can of course also work on a copy of the entire project file.
- For reasons described in the previous chapter, quantizing the track might be a good idea. This reduces the amount of detailed adjustments needed in the Score Editor.
- If you need to quantize, always play back your tracks afterwards to make sure timing was not disrupted due to inappropriate quantize settings. You might have to quantize some sections with one value and others with another.
- If the project contains many repetitions, it might be quicker to record just one instance of each to start with. If you then finish the score work on each section, you can assemble the entire project by working with parts in the Project window. This might save you some time since the detailed adjustments to each section have to be performed only once.
- A similar approach can also be used when you create sections where several instruments play the same rhythm, a horn section for example. Record the first instrument and make adjustments so that it looks like it should in the Score Editor. Then copy the part to the other tracks, and change the pitches of the notes using MIDI input. Finally, go through the copied parts and make fine adjustments, change display transpose settings, etc. This can be a very fast way to create polyphonic parts with complicated rhythms.
- There also may be situations when the quickest way to record a part for several instruments is simply to record it in one go, by playing the chords on your MIDI instrument. If you later want to split the recording into separate tracks or polyphonic voices, you can use the Explode function.

RELATED LINKS

[Entering and editing notes](#) on page 1060

[The Explode function](#) on page 1058

Staff settings

The first thing to do after opening the Score Editor is to make initial staff settings. This is done in the Score Settings dialog, on the Staff page.

There are three ways to open the Score Settings dialog:

- Make the staff active, open the Scores menu and select “Settings...”.
- Double-click on the rectangle to the left of the staff.
If this does not work, the “Double-click on staff flips between full score/part” option may be activated in the Preferences dialog (Scores–Editing page).
- Make the staff active and click the “i” button on the extended toolbar.
For this to work, make sure no notes or symbols are selected – otherwise, clicking the “i” button may open a dialog with settings for the selected object instead.

Click the Staff button to open the Staff page of the Score Settings dialog. The Staff page shows the current settings for the staff on four tabs.

RELATED LINKS

[Displaying single voices or the complete score](#) on page 1036

[Staff settings](#) on page 1080

Situations which require additional techniques

The notes may not always appear in the score as you expect them to, initially. This is because there are a number of situations which require special techniques and settings.

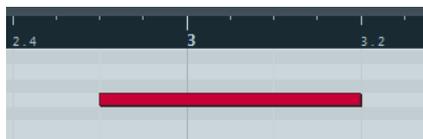
Below you can find a list of some of these and where to find more information about handling them:

- Notes at the same position are considered to be part of a chord. To get independent voicing e. g. notes with different stem directions, such as for vocal material, you need to use the polyphonic voicing feature.



Without and with polyphonic voicing

- If two notes beginning at the same position have different lengths, the longer one is displayed as a number of tied notes. To avoid this, you can either use the No Overlap feature or polyphonic voicing.
- One note is often displayed as two notes with a tie. Please note that this is merely the way the program displays this note; only a single note is “stored”.



This single note in the Key Editor is displayed as two tied notes in the Score Editor.

- Normally the program adds ties where necessary (if a note stretches over a beat), but not always. For a “modern” notation of syncopated notes (less ties) use the Syncopation feature.



The same note, without and with syncopation

- If you find that you want a long note to be displayed as two or more tied notes, you can achieve this with the Cut Notes tool.
- If two notes on the same position are too close to each other or if you want their order in the part reversed, you can do this without affecting playback.
- If a note has the wrong accidental, this can be changed.
- Stem direction and length are automatic, but you can change them manually if you want.
- If you need a split staff (e. g. when you are scoring for piano), there are special techniques for this.

RELATED LINKS

[Polyphonic voicing](#) on page 1221

[No Overlap](#) on page 1085

[Syncopation](#) on page 1084

[The Cut Notes tool](#) on page 1117

[Graphic moving of notes](#) on page 1118

[Accidentals and enharmonic shift](#) on page 1104

[Background: Note stems](#) on page 1101

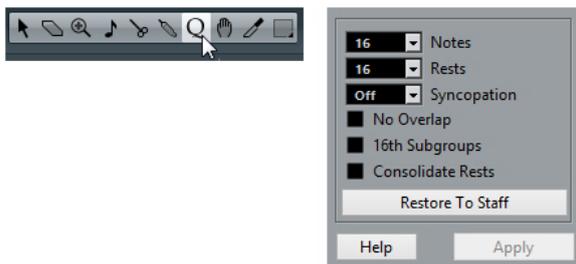
[Split \(piano\) staves](#) on page 1075

Inserting Display Quantize changes

Some situations may require different staff settings on different sections of the track. The staff settings are valid for the entire track, but you can insert changes wherever you like:

PROCEDURE

1. Select the Display Quantize tool on the toolbar or the context menu.
The Display Quantize dialog opens.



Select the Display Quantize tool to open the Display Quantize dialog.

2. Activate the flags you need and set the quantize values as desired.
3. If you want to restore the settings to the ones used in the Score Settings dialog (Staff page), click the "Restore To Staff" button.
4. Move the mouse over the staff where you want to insert a new Display Quantize value.
Use the Mouse Time Position display in the status line to find the exact location. The vertical position is of no relevance as long as you click somewhere in the staff.



5. Click the mouse button to insert a Display Quantize event.

RESULT

The new quantize settings are now inserted into the staff at the position where you clicked. The settings are valid until a new change is inserted. Display Quantize events is always inserted for all voices.

If you are using polyphonic voices, you can insert a Display Quantize event for all voices by pressing **Alt** and clicking with the tool.

If the "Display Quantize Tool affects all Voices" option is activated in the Score Settings dialog on the Project page (Notation Style subpage, in the Miscellaneous category), Display Quantize events is always inserted for all voices.

RELATED LINKS

[Display Quantize and Interpretation Options](#) on page 1082

[The status line](#) on page 1040

[Polyphonic voicing](#) on page 1221

Viewing and Editing Display Quantize Changes

If you activate the "Quantize" checkbox on the filter bar, a marker is shown under the staff for each Display Quantize setting you have entered with the tool.

This allows you to edit your settings in the following ways:

- To edit a Display Quantize change event, double-click on its marker.
This opens the Display Quantize dialog again – adjust the settings and click Apply.
- If the Display Quantize dialog is already open, you can select any Display Quantize change event, adjust its settings in the dialog and click Apply.
- To remove a Display Quantize change, either click its marker to select it and press **Backspace** or **Delete**, or click on it with the Erase tool.

RELATED LINKS

[Showing and hiding elements](#) on page 1041

Adding Display Quantize changes

Very often, the score is fine except for a few bars somewhere. To remedy the problem, insert two Display Quantize changes with the tool (one at the beginning of the section, one after it to restore to the current staff settings).

If you have mixed triplets and straight notes, it can be tempting to insert many Display Quantize changes. Before you do so, try the Auto Quantize options and their additional settings.

RELATED LINKS

[If your music contains mixed straight notes and triplets](#) on page 1084

The Explode function

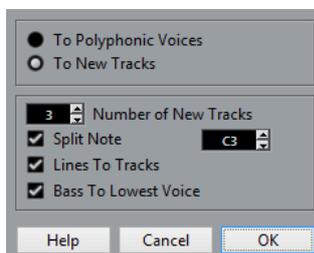
This function allows you to “split” the notes on a staff into separate tracks. It is also possible to use this function to convert a polyphonic staff into polyphonic voices.

IMPORTANT

Create a copy of the original track first, because it will be changed by the operation.

PROCEDURE

1. Open the Scores menu, open the Functions submenu and select “Explode”.
The Explode dialog opens.



2. Make sure that “To New tracks” is selected at the top of the dialog.
3. Enter the desired number of new tracks.
Note that this is the number of new tracks to be created! For example, if you have a three-part polyphonic section and want to split this into three separate tracks, you must specify 2 new tracks, since the original track holds one of the parts.
4. Use the options in the bottom section to set up the criteria for the split.
Choose from the following options:

Option	Description
Split Note	Use this to move all notes below a certain pitch to another track. When this is selected, it is pointless to specify more than 1 new track.
Lines To tracks	Use this when you want all musical “lines” to be put on one track each. The notes with the highest pitch remains on the original track, the notes with the second highest pitch are put on the first new track, and so on.

Option	Description
Bass To Lowest Voice	If this option is activated, the lowest notes always end up on the lowest track.

5. Click OK.
-

RESULT

A number of new tracks are now added to the score and the Project window.

RELATED LINKS

[Automatically – the Explode function](#) on page 1095

Using "Scores Notes To MIDI"

For very complicated scores, there may be situations where you have tweaked the parameters for Display Quantize and Interpretation as best you can, and you still cannot get the score exactly as you want it. Perhaps one setting works fine in one section of the track and another is needed for another section.

In such a case, "Scores Notes To MIDI" helps you out. It changes the lengths and position of some or all the MIDI notes in the edited parts so that they have exactly the values shown on screen.

PROCEDURE

1. For safety, go back to the Project window and make a copy of the track.
 2. Open the part(s) again in the Score Editor.
If you only want some sections of your score to be "converted", make sure to only open those parts.
 3. Make sure that the notes you want to affect are not hidden.
 4. Select "Scores Notes To MIDI" from the Functions submenu on the Scores menu.
The notes are now "converted".
 5. Make whatever adjustments are needed to make the score read as intended.
-

RESULT

Now that the notes have the exact lengths and positions that were previously only displayed, you can probably deactivate many of the options on the Staff page of the Score Settings dialog and delete Display Quantize settings, etc.

If you find the operation did not give you the result you were after, you can undo your settings or go back to the original track, make a copy of that, and start over.

RELATED LINKS

[Hiding/showing objects](#) on page 1188

Entering and editing notes

About this chapter

In this chapter you will learn:

- How to make various settings for how notes are displayed.
- How to enter notes.
- How to use tools and settings to make the score as legible as possible.
- How to set up a split (piano) staff.
- How to work with multiple staves.

Score settings

Before you start entering notes, you need to make some initial staff settings.

There are three ways to open the Score Settings dialog:

- Make the staff active, open the Scores menu and select “Settings...”.
- Double-click on the rectangle to the left of the staff.
If this does not work, the “Double-click on staff flips between full score/part” option may be activated in the Preferences dialog (Scores–Editing page).
- Make the staff active and click the “i” button on the extended toolbar.
For this to work, make sure no notes or symbols are selected – otherwise, clicking the “i” button may open a dialog with settings for the selected object instead.

The Score Settings dialog shows the current settings for the active staff.

RELATED LINKS

[The basics](#) on page 1035

[How the Score Editor works](#) on page 1030

[Displaying single voices or the complete score](#) on page 1036

[Staff settings](#) on page 1080

Applying settings and selecting other staves

To make settings for another staff, simply make it active in the score (by clicking anywhere in the staff or by using the **Up Arrow/Down Arrow** keys).

NOTE

Always click Apply before making another staff active – otherwise your settings are lost!

Staff presets

When you want to reuse settings made for one track in other tracks, you can save some time by creating a staff preset.

NOTE

There are a number of staff presets available, set up to suit various instruments, etc. These are accessed via the Presets pop-up menu on the Staff page of the Score Settings dialog, or from the Staff context menu, opened by right-clicking on the rectangle to the left of the staff. Use them as they are, or as starting points for your own settings.

RELATED LINKS

[Working with staff presets](#) on page 1081

Suggested initial settings

When you start out entering notes, your staff settings should make your score display the notes as entered. We suggest the following:

Option	Suggested setting
Display Quantize: Notes	64
Display Quantize: Rests	64
Auto Quantize	Activated
Syncopation	Off
Consolidate Rests	Off
Clean Lengths	Off
No Overlap	Off
Shuffle	Off
Key	As required
Clef	As required
Auto Clef	Activate this if you want the program to select a treble or bass clef automatically.
Display Transpose value	0
Options tab settings	As is
Polyphonic tab settings	Staff Mode: Single
Tablature tab settings	Tablature Mode deactivated

NOTE

It is very important that you understand how the Display Quantize values for notes and rests interact with the score. If you select too large a notes/rests value, the notes you “click in” may not appear as intended.

RELATED LINKS

[Split \(piano\) staves](#) on page 1075

[How the Score Editor works](#) on page 1030

[Display Quantize and Interpretation Options](#) on page 1082

Note values and positions

Two of the most important settings for entering notes are the length of the note (the note value) and the minimum spacing between notes (the Quantize value).

Selecting a note value for input

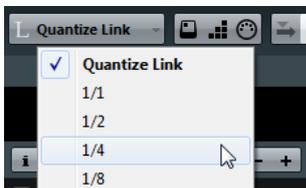
You can choose the length for entering notes as follows:

- By clicking the note symbols on the extended toolbar.
You can select any note value from 1/1 to 1/64 and activate/deactivate the dotted and triplet options by clicking the two buttons to the right.



The selected note value is displayed in the Length Quantize field on the toolbar and also reflected by the cursor shape of the Insert Note tool.

- By selecting an option from the Length Quantize pop-up menu on the toolbar.



- By assigning key commands to the different length values.
This is done in the Key Commands dialog (in the category “Set Insert Length”).

About unusual note values

Not all note values can be selected directly, for example double dotted notes. Such notes are created by changing the length of the note after you have entered it, by gluing notes together or by using the Display Length feature.

RELATED LINKS

[Changing the length of notes](#) on page 1073

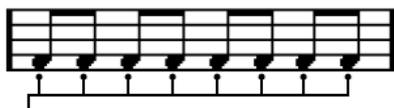
[Lengthening a note by gluing two notes together](#) on page 1074

Selecting a Quantize value

When you move the mouse pointer over the score the Mouse Time Position display in the status line tracks your movement and shows the current position in bars, beats, sixteenth notes, and ticks.

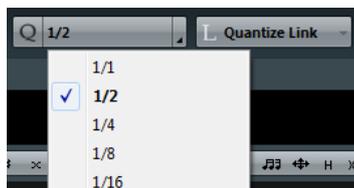
Positioning on screen is controlled by the current Quantize value. If you set this to 1/8, for example, you can only insert and move notes to eighth note positions, at quarter notes, at half bars or at bar positions. It is a good strategy to set the Quantize value to the smallest note value

in the project. This does not stop you from inputting notes at “coarser” positions. However, if you set the Quantize value to too small a note value, it is easier to make mistakes.



With the Quantize value set to 1/8, you can only input notes at eighth note positions.

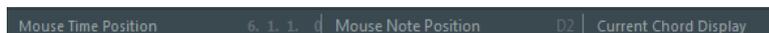
The Quantize value is set on the toolbar on the “Quantize Presets” pop-up menu:



- You can also assign key commands to the different Quantize values. This is done in the Key Commands dialog (in the category “MIDI Quantize”).
- Just like in the other MIDI editors, you can use the Quantize Panel to create other Quantize values, irregular grids, etc. However, this is not often used when inputting score notes.

The mouse position info

While you often use the graphical position in the actual score to determine where the notes go, there are instances when you want to verify the position numerically using the mouse position info displayed in the status line.



The Mouse Note Position display shows the pitch according to the vertical position of the pointer in a staff. The Mouse Time Position display shows the “musical position” in bars, beats, sixteenth notes, and ticks:

- The relation between beats and bars depends on the time signature: In 4/4 there are 4 beats to a bar. In 8/8 there are eight, in 6/8 there are six, etc.
- The third number is the sixteenth note within the beat. Again, the time signature determines the number of sixteenth notes to each beat. In a quarter note based time signature (4/4, 2/4, etc.) there are four sixteenth notes to each beat, in an eighth note based time signature (3/8, 4/8, etc.), there are two sixteenth notes, etc.
- The last value is in ticks, with 480 ticks per quarter note (and thus 120 ticks per sixteenth note).

The figures below show some note positions and their corresponding position values:

Eighth note positions

2/2	1.1.1.0	1.1.3.0	1.1.5.0	1.1.7.0	1.2.1.0	1.2.3.0	1.2.5.0	1.2.7.0
4/4	1.1.1.0	1.1.3.0	1.2.1.0	1.2.3.0	1.1.3.0	1.3.3.0	1.4.1.0	1.4.3.0
8/8	1.1.1.0	1.2.1.0	1.3.1.0	1.4.1.0	1.5.1.0	1.6.1.0	1.7.1.0	1.8.1.0

Eighth note triplet positions

						
2/2	1.1.1.0	1.1.2.40	1.1.3.80	1.1.5.0	1.1.6.40	1.1.7.80
4/4	1.1.1.0	1.1.2.40	1.1.3.80	1.2.1.0	1.2.2.40	1.2.3.80
8/8	1.1.1.0	1.1.2.40	1.2.1.80	1.3.1.0	1.3.2.40	1.4.1.80

Sixteenth note positions

								
2/2	1.1.1.0	1.1.2.0	1.1.3.0	1.1.4.0	1.1.5.0	1.1.6.0	1.1.7.0	1.1.8.0
4/4	1.1.1.0	1.1.2.0	1.1.3.0	1.1.4.0	1.2.1.0	1.2.2.0	1.2.3.0	1.2.4.0
8/8	1.1.1.0	1.1.2.0	1.2.1.0	1.2.2.0	1.3.1.0	1.3.2.0	1.4.1.0	1.4.2.0

Adding and editing notes

Entering notes using the computer keyboard

A quick and easy way to enter notes, without having to decide on the pitch, position and note value first is using the computer keyboard. To enter a note, proceed as follows:

PROCEDURE

1. On the toolbar, activate the "Computer Keyboard Input" button.
 Now you can enter notes using the computer keyboard.



2. Hold down **Alt**.

NOTE

If the "Computer Keyboard Note Entry: Require ALT-Key" option is deactivated in the Preferences dialog (Scores-Editing page), you can insert notes without holding down **Alt**.

A note with the note value specified on the extended toolbar appears. By default, the insert position is the first position of the bar and the pitch is C3.

- To change the pitch, press the key that corresponds to the note on your computer keyboard (c, d, e, f, etc.). If "Computer Keyboard Note Entry: Use Virtual Keyboard Keys" option is activated in the Preferences dialog (Scores-Editing page), you can press the key that corresponds to the note on the virtual keyboard (qwerty) instead.
- To transpose the note in semitone steps, use the **Up Arrow** and **Down Arrow** keys.
- To transpose the note in octave steps, use the **Page Up/Page Down** keys.
- To change the insert position of the note, use the **Left Arrow** and **Right Arrow** keys. Note that for position changes, the Quantize value is taken into account.

- To change the length of the note, hold down **Shift** and use the **Left Arrow** and **Right Arrow** keys.
This changes the note value step by step, passing from one Quantize value to the next.

NOTE

If the “Computer Keyboard Note Entry: Legato” option is activated in the Preferences dialog (Scores–Editing page), the length of the previous note is changed on inserting notes.

3. To insert the note, press **Return**.

NOTE

If the “Computer Keyboard Note Entry: Enter Notes Instantaneously” option is activated in the Preferences dialog (Scores–Editing page), you can insert notes without pressing **Return**.

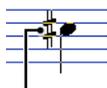
The note with the specified pitch and note value is inserted at the selected position and the insert position for the next note changes according to the Quantize value. If you press **Shift-Return**, the insert position does not change, allowing you to enter chords.

Entering notes with the mouse

To add a note to the score, proceed as follows:

PROCEDURE

1. Make the staff active.
Notes are always inserted on the active staff.
2. Select the desired note value.
3. If you select the note value by clicking on a symbol on the extended toolbar, the Insert Note tool is automatically selected – otherwise select the Insert Note tool on the toolbar or context menu.
4. Select a Quantize value.
The Quantize value determines the spacing between notes. If you set Quantize to 1/1 you only can add notes at downbeats. If you set Quantize to 1/8, you can add notes at eighth note positions, etc.
5. Click in the staff and keep the mouse button pressed.
The Insert Note tool changes into a note symbol (showing the note exactly as it would be inserted in the score).
6. Move the mouse horizontally to find the correct position.
7. Move the mouse vertically to find the correct pitch.



Accidentals are shown beside the note to indicate the current pitch.

NOTE

If the “Show Note Info by the Mouse” option is activated in the Preferences dialog (Scores–Editing page), the position and pitch of the note is also shown in a “tooltip” next to the pointer while you are dragging. If you find that screen redraws are too sluggish, you may want to deactivate this option.

8. Release the mouse button.

The note appears in the score.

IMPORTANT

If you activate the “Animate Note Cursor” option in the Preferences dialog (Scores–Editing page), you do not need to keep the mouse button pressed to see the note as it would be inserted in the score.

RELATED LINKS

[The active staff](#) on page 1039

[Selecting a note value for input](#) on page 1062

Adding more notes

PROCEDURE

1. If you want the next note to have a different length value, select the corresponding note symbol.
 2. If you need finer positioning, or if the current value is too fine, change the Quantize value.
 3. Move the mouse to the desired position, and click.
Notes input at the same position are automatically interpreted as chords, see below.
-

About the interpretation

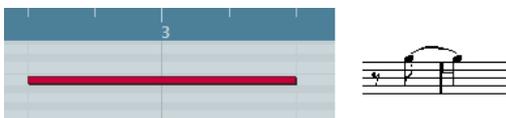
The notes may not always appear in the score as you initially expect them to. This is because there are a number of situations that require special techniques and settings. Below you can find a list of some of these and where to find more information about handling them:

- Notes at the same position are considered parts of a chord. To get independent voicing (for example notes with different stem directions), such as for vocal material, you need to use polyphonic voicing.



Without and with polyphonic voicing

- If two notes beginning at the same position have different lengths, the longer is displayed as a number of tied notes. To avoid this, you can either use the “No Overlap” feature or polyphonic voicing.
- One note is often displayed as two notes with a tie. This is only how the program displays the note, there is still only a single note “stored”.



This single note in the Key Editor is displayed as two tied notes in the Score Editor.

- Generally the program adds ties where necessary (if a note stretches over a beat), but not always. For more “modern” notation of syncopated notes (less ties), you need to use the syncopation feature.



The same note, without and with Syncopation

- If you want a long note to be displayed as two (or more) tied notes, you can use the Cut Notes tool for this.
- If a note has the wrong accidental, this can be changed.

- If two notes on the same position are too close to each other or if you want their “graphical order” in the score reversed, you can do this without affecting playback.
- Stem direction and length is normally automatic, but you can set it yourself.
- If you are scoring for piano and therefore (or for other reasons) need a split staff, there are special techniques for this.

RELATED LINKS

- [No Overlap](#) on page 1085
- [Syncopation](#) on page 1084
- [Accidentals and enharmonic shift](#) on page 1104
- [Graphic moving of notes](#) on page 1118
- [Background: Note stems](#) on page 1101
- [Split \(piano\) staves](#) on page 1075
- [Polyphonic voicing](#) on page 1089

Selecting notes

In the operations described in the rest of this chapter, you often work on selected notes. The text below describes how to select notes:

By clicking

To select a note, click on the note head with the Object Selection tool. The note head gets colored to indicate that it is selected.

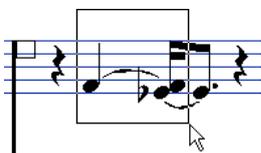


- To select more notes, hold down **Shift** and click on them.
- To deselect notes, hold down **Shift** and click on them again.
- If you hold down **Shift** and double-click on a note, this note and all the following notes in the same staff are selected.

Using a selection rectangle

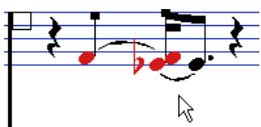
PROCEDURE

1. Click in an empty area in the score with the Object Selection tool and keep the mouse button pressed.
2. Drag the mouse pointer to create a selection rectangle.



You can drag to select notes on several voices or staves.

3. Release the mouse button.
All notes with note heads inside the rectangle are selected.



If you want to deselect one or more of the notes, hold down **Shift** and click on them.

Using the keyboard

By default, you can step through (and select) the notes in the staff using the **Left Arrow** and **Right Arrow** keys. If you press **Shift**, you can select a series of notes as you step through them.

- If you are working with polyphonic voices, you step through the notes on the current track, i. e. in a split system, you step through the staves.
- If you want to use other keys for selecting notes, you can customize the settings in the Key Commands dialog (in the Navigate category).

Selecting tied notes

Longer notes are often displayed in the score as one note with a tie. If you intend to select the entire note (e. g. for deleting), you should select the first note, not the tied note.

IMPORTANT

There is a setting for this in the Preferences dialog (Scores–Editing page): If you activate “Tied Notes selected as Single Units”, the whole note is selected, even if you click on one of the tied notes.

Deselecting everything

To deselect everything, simply click in an empty area of the score with the Object Selection tool.

Moving notes

In the following, you can find descriptions of the various methods to move notes, as well as related features.

Moving by dragging

PROCEDURE

1. Set the Quantize value.
The Quantize value restricts your movement in time. You cannot place notes on positions smaller than the Quantize value.
2. Select the note(s) you want to move.
You can select notes across several staves.
3. Click one of the selected notes and drag it to a new position.
The horizontal movement of the note is “magnetically attracted” to the current Quantize value. The Mouse Time Position and Mouse Note Position displays in the status line show the new position and pitch for the dragged note.

NOTE

If the “Show Note Info by the Mouse” option is activated in the Preferences dialog (Scores–Editing page), the position and pitch of the note is also shown in a “tooltip” next to the pointer while you are dragging. If you find that screen redraws are too sluggish, you may want to deactivate this option.

4. Release the mouse button.
The notes appear at their new position.
 - If you press **Ctrl/Cmd** and drag, movement is restricted to vertical or horizontal (depending on the direction in which you drag).

- If you move notes vertically and the “Keep moved Notes within Key” option is activated in the Preferences dialog (Scores–Editing page), the notes are transposed within the current key only.

RELATED LINKS

[Selecting a Quantize value](#) on page 1062

Moving by using key commands

Instead of dragging the note with the mouse, you can assign key commands for this:

- The corresponding commands can be found in the Nudge category in the Key Commands dialog.
- When moving notes to the left or right using key commands, the notes are moved in steps according to the Quantize value.
The keys assigned for up/down nudging transpose notes in semitone steps.

Moving across staves – the Lock button

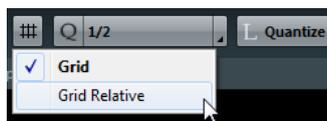
If you are editing several tracks, you may want to move notes from one staff to another.

PROCEDURE

1. Make the desired Quantize settings and select the notes.
Make sure to only select notes on the same staff.
 2. Make sure that the “L” (Lock) button on the extended toolbar is deactivated .
If this button is activated, you cannot move notes and other objects from one staff to another, which is handy if you need to transpose a note very high or low, for example.
 3. Click on one of the notes and drag them to the new system.
The active staff rectangle indicates on which staff the dragged note(s) appears.
-

The Snap mode

The notes you move (or copy) snap to positions defined by the note length and Quantize values. Using the Snap Type pop-up menu on the Score Editor toolbar you can select the Snap mode used when moving or copying notes:



- When using the “Grid” mode, notes you move (or copy) always snap to exact grid positions.
- When using the “Grid Relative” mode, a note with a certain position relative to a grid line always maintains that relative position to the grid when moved (or copied).

Acoustic Feedback



To hear the pitch of the note while moving, activate the speaker icon (Acoustic Feedback) on the toolbar.

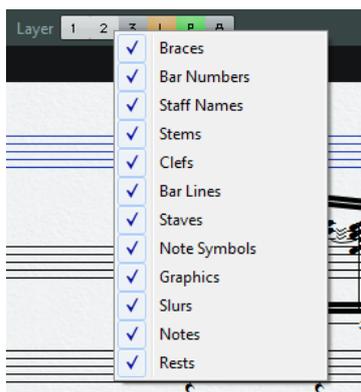
About the lock layers

When you are moving and editing notes in the score, you might accidentally move other objects nearby. To avoid this, assign different types of objects to different “lock layers” (up to three) and instruct Cubase to “lock” one or two of these layers, making them unmovable.

There are two ways to set up which type of object should belong to which lock layer:

- Open the Preferences dialog from the File menu and select the Scores–Note Layer page. This page lets you adjust the layer setting for each object type.
- Right-click one of the layer buttons, (1-2-3), on the extended toolbar to bring up a pop-up menu, showing which object types are associated with that layer.

A checkmark for an object type means it belongs to that layer. If no checkmark is shown, you can select the object type on the menu to move it to that layer.



To lock a layer, click the corresponding layer button, so that it is disabled not highlighted. You can only select or move objects whose Layer button is activated.

NOTE

There are also “L” and “P” layer buttons, for the layout and project layer. Clicking these buttons allows you to lock the layout and project layers.

RELATED LINKS

[Using the lock layers](#) on page 1139

[Background: The different layers](#) on page 1124

Displaying layers

To see which score objects you assigned to which layer, you can activate and deactivate the Layer buttons on the extended toolbar.



- To display all the score objects that you assigned to the different note layers, activate layers 1, 2, or 3.
- To display all the score objects that are associated with the layout layer, activate the Layout Layer (L) button.
- To display all the score objects that are associated with the project layer, activate the Project Layer (P) button.
- To get an overview of all layers, activate the Colorize Layer (A) button. This deactivates all other layer buttons and displays the score objects in different colors, where each color stands for a specific type of layer.

Duplicating notes

To duplicate notes in the score, proceed as follows:

PROCEDURE

1. Set the Quantize value and select the desired notes.
You can duplicate any block of notes, even on several systems at the same time. The Snap mode applies.
2. Press **Alt** and drag the duplicate notes to their new position.
 - If you want to restrict movements to one direction, press **Ctrl/Cmd**. This works just as for moving, as described above.
 - If you want to restrict the pitch to inside the current key only, make sure that the “Keep moved Notes within Key” option is activated in the Preferences dialog (Scores–Editing page).
3. Release the mouse button to insert the notes.
Alt is the default modifier key for copying/duplicating. If you like, you can change this in the Preferences dialog (Editing–Tool Modifiers page).
The entry for this is found in the Drag & Drop category (“Copy”).

NOTE

You can also move or copy whole bars by dragging the bar handles.

RELATED LINKS

[The Snap mode](#) on page 1069

[Moving and duplicating with the bar handles](#) on page 1143

Cut, copy, and paste

- To cut notes, select them and choose Cut from the Edit menu (or use a key command, by default **Ctrl/Cmd-X**).
The notes are now removed from the score and put on the clipboard.
- To copy notes, select them and choose Copy from the Edit menu (or use a key command, by default **Ctrl/Cmd-C**).
A copy of the notes is made, and put on the clipboard. The original notes remain where they were.

IMPORTANT

The clipboard can only hold one set of notes. If you cut or copy and then cut or copy again, the notes copied to the clipboard first are lost.

Inserting notes from the clip board to the score

Notes that you have put on the clipboard by cutting or copying can be inserted into the score again as follows:

PROCEDURE

1. Activate the desired staff.
2. Move the project cursor to the position where you want the first note to appear.
This is done by holding down **Alt** and **Shift** and clicking at the desired position in the score.
3. Select Paste from the Edit menu (or use a key command, by default **Ctrl/Cmd-V**).

The notes are pasted in, beginning at the project cursor. If the cut or copied notes come from different staves, they are also inserted on different staves. Otherwise, the notes are inserted on the active staff. They keep the pitch and relative positions they had when you cut or copied them.

Editing pitches of individual notes

By dragging

The simplest way to edit the pitch of a note is to drag it up or down. Remember to hold down **Ctrl/Cmd** to avoid moving the note sideways as well.

- If the “Keep moved Notes within Key” option is activated in the Preferences dialog (Scores–Editing page), notes are transposed within the current key only.
- To avoid accidentally moving the note into another staff, activate the Lock button.
- When you drag the mouse up and down before releasing the button, accidentals are shown beside the note to indicate the current pitch.

This helps you verify the vertical position for the note.

RELATED LINKS

[Moving across staves – the Lock button](#) on page 1069

Using the Transpose Palette

The Transpose Palette on the toolbar contains buttons for transposing the selected notes up or down in steps of one semitone or one octave.

- To show the Transpose Palette, right-click the toolbar and activate “Transpose Palette” on the context menu.

Using key commands

Instead of transposing the note with the mouse, you can assign key commands for this.

- The commands for which you can assign key commands are found in the Nudge category in the Key Commands dialog.
Transpose commands are, for example, “Up” (transpose one semitone up) and “Down” (transpose one semitone down).

Using the info line

You can use the info line to change the pitches (and other properties) of one or several notes numerically.

- If you have several notes selected and change the pitch on the info line, the changes are relative.
That is, all selected notes are transposed by an equal amount.
- If you have several notes selected, hold down **Ctrl/Cmd** and change the pitch on the info line, the changes are absolute.
That is, all selected notes are set to the same pitch.

RELATED LINKS

[Info Line](#) on page 52

Via MIDI

PROCEDURE

1. On the toolbar, activate the MIDI Input button and the Record Pitch button to the right. If you also want to change the note-on and/or note-off velocity of the notes via MIDI, this can be done by also activating the corresponding velocity buttons.



To edit notes via MIDI (pitches only), set up the buttons like this.

2. Select the first note that you want to edit.
 3. Press a key on your MIDI keyboard.
The note takes on the pitch of the key you pressed. The program then selects the next note.
 4. To change the pitch of the next selected note, simply press the desired key.
You can change note pitches by simply pressing the relevant keys. You can also use key commands (by default the **Left Arrow** and **Right Arrow** key) to pass from one note to the other. For example, if you make a mistake, you can step back to the previous note by pressing the **Left Arrow** key.
-

RELATED LINKS

[MIDI Editors](#) on page 671

Changing the length of notes

When it comes to note lengths, the Score Editor is special in that it does not necessarily display the notes with their actual length. Depending on the situation, you may want to change the “physical length” of the notes or the “display length”.

Changing the “physical” length

This changes the actual length of the notes. The change is audible when you play back the music.

IMPORTANT

Remember that the appearance of notes and rests in the score is determined by the Display Quantize settings on the Staff page of the Score Settings dialog. Depending on the Notes and Rests values, notes may be displayed as if they were longer than they really are.

RELATED LINKS

[Display Quantize](#) on page 1031

By using the extended toolbar

Using the extended toolbar is another quick way to set a number of notes to the same length:

PROCEDURE

1. Select the notes that you want to change.
 2. Hold down **Ctrl/Cmd** and click on one of the note icons on the extended toolbar.
All the selected notes now get the note value on which you clicked.
-

By using the info line

You can also edit length values numerically on the info line. The same rules apply as when changing the pitch of notes.

RELATED LINKS

[Using the info line](#) on page 1072

Lengthening a note by gluing two notes together

You can create unusual note length values by gluing notes of the same pitch together.

PROCEDURE

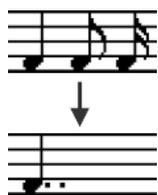
1. Insert the notes that you want to glue together (if they do not already exist).
2. Select the Glue tool on the toolbar or context menu.
3. Click on the first note.

This note is now tied to the first following note with the same pitch.

IMPORTANT

Make sure that you have Display Quantize values for notes and rests that allow you to display notes of the created note value.

4. If you want to glue more notes, click again.
By gluing together a quarter note, an eighth note and a sixteenth note...



...you get a double dotted quarter note.

Changing the display length

If you want to change the displayed length of notes without affecting how they play back, the first thing to try is to adjust Display Quantize, either for the whole staff or for a separate section, using the Display Quantize tool.

But you can also make display length adjustments to individual notes in the Set Note Info dialog:

PROCEDURE

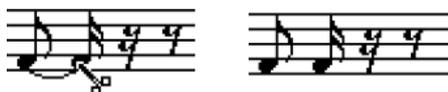
1. Double-click on the note.
The Set Note Info dialog opens.
 2. Locate the "Length" setting.
By default, this is set to "Auto", which means that the note is displayed according to its actual length (and the Display Quantize settings).
 3. Double-click in the value field and enter a new length value (displayed in bars, beats, sixteenth notes, and ticks).
To set the display length to "Auto" again, scroll the value down to zero.
 4. Click Apply and close the dialog.
The note is now displayed according to its display length setting. However, the Display Quantize settings still apply!
-

RELATED LINKS

[Inserting Display Quantize changes](#) on page 1056

Splitting a note in two

If you have two notes strung together by a tie, and click on the “tied” note head with the Split tool, the note is divided into two, with the length of the “main” and the tied note, respectively.



Before and after splitting a tied note

Working with the Display Quantize tool

There are instances when you want different staff settings for different sections of the track. The settings on the Staff page of the Score Settings dialog are valid for the entire track, but by using the Display Quantize tool you are able to insert changes and exceptions wherever you like.

RELATED LINKS

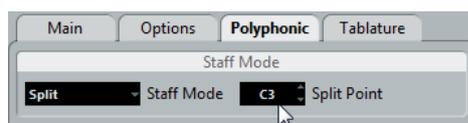
[Inserting Display Quantize changes](#) on page 1056

Split (piano) staves

Setting up the split staff

PROCEDURE

1. Make a staff active.
 2. Open the Score Settings dialog on the Staff page and select the Polyphonic tab.
 3. From the Staff Mode pop-up menu, select Split.
 4. Set the Split Point value to a suitable note.
- All notes below this note value are put on the lower clef, all above are put on the upper clef.



Split mode selected.

If the default piano clef settings for the upper and lower staff are not what you want, you can adjust these settings now (or you can make key and clef adjustments directly in the score).

5. Make whatever additional staff settings you need.
These apply to both the upper and lower staves of the split system.
6. Click Apply.





Before and after setting a split at C3

RELATED LINKS

[Setting clef, key, and time signature](#) on page 1043

Changing the split point

PROCEDURE

1. Make sure that the system you are working on is active.
 2. Open the Score Settings and select the Staff page.
 3. Select the Polyphonic tab.
 4. Change the Split Point value.
 5. Click Apply.
-

RESULT

Now, some notes that were previously on the lower staff are on the upper, or vice versa.

Strategies: Multiple staves

As described above, when you have parts on several tracks selected in the Project window, these are put on one staff each, when you open the Score Editor. This allows you to work on several staves in parallel.

Working with several staves is not much different from working with one. Below follow some guidelines that apply specifically to working with multiple staves.

Score settings dialog, Staff page

The settings on the Staff page of the Score Settings dialog are local to each staff. You can have the Score Settings dialog open and select each staff in turn to make settings – just remember to click Apply before selecting another staff, otherwise your changes are lost.

If several staves share settings, you can save some time by using staff presets. Set up the staff settings for the first staff, and save them as a preset. This preset can then be applied to any of the other staves, one at a time.

RELATED LINKS

[Working with staff presets](#) on page 1081

Selecting notes

You can select notes from one or several staves at the same time, using any of the selection methods.

RELATED LINKS

[Selecting notes](#) on page 1067

Adding notes

This is done just as on a single system. Please note the following:

- When you enter a note, use the Mouse Note Position display (in the status line) to determine the pitch. Whether it ends up on the upper or lower staff has nothing to do with where you aim with the mouse. The Split Point setting always decides if a note goes on the upper or lower staff. If you change the split point, this affects existing notes, see below.
- Sometimes a fixed split point is not good enough. You might want to put two notes with the same pitch on different staves in different parts of the score. To achieve this you need to use polyphonic voicing.
- You can add notes to any staff by clicking on it with the Insert Note tool. The active staff rectangle moves to the staff where you input the note.
- If you need to enter a note with a very high or low pitch, which makes it wind up on the wrong staff when you click, first enter a note with the wrong pitch, and then edit its pitch.

RELATED LINKS

[Adding and editing notes](#) on page 1064

[Polyphonic voicing](#) on page 1089

[Editing pitches of individual notes](#) on page 1072

Inserting and editing clefs, keys, or time signatures

It is possible to insert a change of clef, key, or time signature anywhere in the score.

Inserting a symbol on one staff

PROCEDURE

1. In the Symbols Inspector, open the “Clefs etc.” section.
This contains clef, key, and time signature symbols.



2. Select the symbol that you want to insert.
When you move the mouse over the score display, the pointer takes on the form of a pencil.
3. Move the mouse over the staff where you want to insert a new symbol.
Use the Mouse Time Position display in the status line to find the exact location. The Mouse Note Position, i. e. the vertical position is of no relevance as long as you click somewhere in the staff. Time signature changes can only be inserted at the beginning of a bar.
4. Click the mouse button to insert the symbol.

IMPORTANT

Inserting a symbol at position 1.1.1.0 is the same as changing the staff settings which are stored in the track. Inserting anywhere else adds the change to the part.

RELATED LINKS

[About the Draw tool](#) on page 1129

Inserting a symbol on all staves

If you hold down **Alt** when you insert a symbol with the Draw tool, it is inserted at this position on all staves being edited in the Score Editor.

- Time signature changes are always inserted on all tracks in the score.
Or rather, they are inserted on the signature track, which affects all tracks.
- For key changes, Display Transpose is taken into account.
This allows you to set all staves to a new key and the staves set to Display Transpose still show the correct key after the key change.

NOTE

If some of the staves are bracketed (straight brackets only, as set up in the Score Settings dialog on the Layout page), inserting a symbol for one of these staves inserts it for all other staves within the bracket. Staves outside the bracket are not affected.

RELATED LINKS

[Adding brackets and braces](#) on page 1198

Editing clefs, keys, and time signatures

If you double-click on a symbol, a dialog appears allowing you to change the settings for it.

If you hold down **Alt** when double-clicking, all symbols at the same position are changed accordingly. With key signatures, the Display Transpose value is taken into account as described above.

- In the Score Settings dialog on the Project page (Notation Style subpage), you can find several options for how clef, key, and time signature changes are displayed.
You can also adjust the automatic spacing between these symbols in the Spacings subpage. See the dialog help for details.

Moving clefs

Clefs inserted into the score have an effect on how notes are displayed. If you for example insert a bass clef in the middle of a treble staff, the staff switches to show bass pitches. Therefore it is very important where you insert the clef.

If you want to move the clef graphically, without disturbing the relation between the clef and the notes, proceed as follows:

PROCEDURE

1. Select the Layout tool on the toolbar or context menu.
Note that this tool is available in Page Mode only.

2. Click on the clef and drag it to the desired position.
Note that this tool is available in Page Mode only.

NOTE

When you insert a clef change in the score, you can decide whether this has the same size as the first (default) clef symbol or whether it is displayed with a smaller symbol. Simply right-click the symbol and activate or deactivate "Display Clef Changes as Small Symbols".

NOTE

If “Warnings for new Clefs at Line Breaks” is activated on the Clef context menu and you inserted a clef change at a line break in the score, the Clef change symbol is inserted in the last bar before the staff break. If this option is deactivated, the symbol is inserted in the first bar of the next staff line.

Deleting notes

Using the Erase tool

PROCEDURE

1. Select the Erase tool on the toolbar or context menu.
 2. One at a time, click on the note(s) you want to erase, or enclose them in a selection rectangle, and click on any of the notes.
-

Using the Delete menu option or the keyboard

PROCEDURE

1. Select the notes that you want to delete.
 2. Select Delete from the Edit menu, or press **Delete** or **Backspace** on the computer keyboard.
-

Staff settings

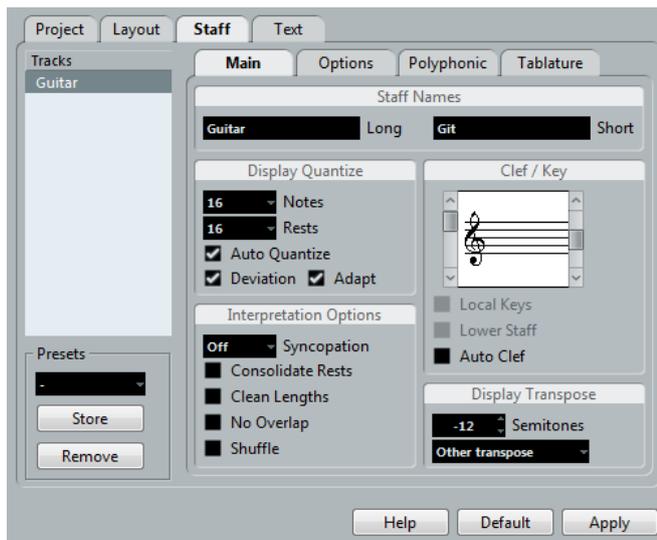
About this chapter

In this chapter you will learn:

- How to make staff settings.
- How to work with staff presets.

Staff settings

Below follows a run-through of all staff settings, more detailed information about the ones already described and references to other places in the manual for some options.



The Staff page has four tabs – here, the Main tab is selected.

Making settings

PROCEDURE

1. Open the Score Settings and select the Staff page.
2. With the dialog open, make the desired staff active.
Click anywhere in a staff to make it active, or use the **Up Arrow** and **Down Arrow** keys to step from staff to staff.
3. Select the desired tab and make all necessary settings.

The settings for regular staves are found on the Main and Options tab, the Polyphonic tab contains settings for split systems and polyphonic voices while the Tablature tab lets you set up tablature scores.

4. When you have made the desired settings, click Apply.

NOTE

If the “Apply closes Property Windows” option is activated in the Preferences dialog (Scores–Editing page), clicking Apply also closes the dialog.

To make settings for another staff, simply make it active in the score (by clicking anywhere in the staff or by using the **Up Arrow/Down Arrow** keys).

However, please note that you need to click Apply before making another staff active – otherwise your settings are lost!

IMPORTANT

Staff settings can be saved in the track presets.

RELATED LINKS

[Track Presets](#) on page 177

Working with staff presets

Making staff settings for your scores can be time-consuming. Staff presets allow you to reuse those settings whenever you work with a staff similar to one you have worked on before. A staff preset contains all the settings from the Staff page of the Score Settings dialog, except for the key.

- To save the current settings (including the settings on the Options tab, see below) click the Store button in the Presets section of the Staff page.

Enter a name for the preset in the name dialog that appears, and click OK. The preset is now available on the Presets pop-up menu (in all projects).



- There are a number of staff presets available, set up to suit various instruments, etc. The presets are accessed from the Presets pop-up menu on the Staff page of the Score Settings dialog or from the staff context menu, opened by right-clicking on the rectangle to the left of a staff.
Use them as they are, or as starting points for your own settings. Note that this loads the settings in the preset into the dialog – to apply these to a staff you must click the Apply button as usual. You can also apply staff presets directly in the score – see below.
- To remove a preset, select it from the pop-up menu and click the Remove button.

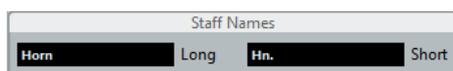
Applying a preset directly in the score

If you right-click on the rectangle to the left of a staff, a context menu appears, listing all available presets. Select one to apply it to the staff.

How staff presets are stored

The staff presets are stored as individual files in the Presets–Staff Presets folder within the Cubase program folder. The presets are available for selection in any project you create or edit.

Staff names



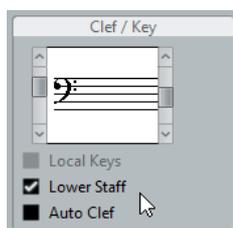
These fields allow you to specify a “long” and a “short” name for the staff. The long name is shown for the very first system for this staff in the score (at the start of the project), while the short name is shown for the remaining systems.

- Whether the names are shown at all is set in the Score Settings dialog on the Layout page.
- If you only want the “long name” to be shown (i. e. if you do not want a name shown for each system in the score), simply delete the short name.
- If the “Show Long Staff Names on new Pages” option is activated in the “Staff Names” section of the Score Settings dialog (Project page), the long name is shown at the beginning of each new page.
- You can also specify two separate subnames by double-clicking the staff name and entering them in the upper and lower text entry fields in the dialog that appears.
Note that this is only displayed correctly if you are in Page Mode and if “Show Staff Names to Left of Staff” is activated in the Score Settings dialog, on the Project–Notation Style subpage (Staff Names category).

RELATED LINKS

[Staff names](#) on page 1172

Key and clef



The basic key and clef settings are described in detail in another section (see below). There is also a Lower Staff checkbox which is only used in conjunction with split (piano) staves and polyphonic voicing.

- If you want to set a different key symbol, e. g. when scoring for French horn, activate the “Local Keys” option.

RELATED LINKS

[Setting clef, key, and time signature](#) on page 1043

[In a split system](#) on page 1047

Display Quantize and Interpretation Options

These two sections of the dialog contain a number of settings used to determine how the notes are interpreted. While these settings are more critical to making MIDI recorded music appear as legible as possible it is still important to have them set correctly when entering notes using the mouse. Below you can find descriptions of the settings.

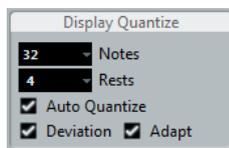
There are “fixed” Display Quantize values plus an “Auto” option which should only be used when your music contains mixed straight notes and triplets.

RELATED LINKS

[Adding Display Quantize changes](#) on page 1058

[Display Quantize](#) on page 1031

Display Quantize values



Notes and Rests

- Generally, the Notes value should be set to a value equal to, or smaller than, the “smallest note position” that you want to be shown in the score.
- The Rests value should be set to a value equal to, or smaller than, the smallest note value (length) you want to be displayed for a single note, positioned on a beat.
- If the score contains only triplets, or mostly triplets, select one of the Triplet options.

Auto Quantize

- If the project contains no triplets or only triplets, deactivate this option.
- If the project contains mixed triplets and straight notes, activate this option (see below).

Deviation and Adapt

- If Deviation is activated, triplets/straight notes are detected even if they are not exactly “on the beat”. However, if you know your triplets/straight notes are perfectly recorded (quantized or entered by hand), deactivate this option.
- If Adapt is activated, the program “guesses” that when one triplet is found, there are probably more triplets surrounding it. Activate this option if not all of your triplets are detected.

If your music only contains “straight” notes or triplets

PROCEDURE

1. Specify a Notes value.
For example, if you have notes on odd sixteenth note positions, the Notes value should be set to 16 (sixteenth notes). The “T” values on the pop-up menu are for triplets.
2. Specify a Rests value.
For example, if you want a single short note on a beat (quarter note position) to be displayed as a quarter note, set the Rests value to 4 (quarter notes).
3. Deactivate the Auto Quantize option.
4. Set all the Interpretation Options.
These are described in detail below.
5. Examine the score.
6. If necessary, use the Display Quantize tool to insert “exceptions” to the staff settings.

RELATED LINKS

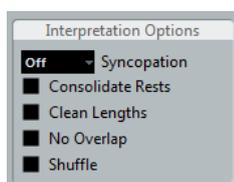
[Inserting Display Quantize changes](#) on page 1056

If your music contains mixed straight notes and triplets

PROCEDURE

1. Examine the score and decide if it mainly contains triplets or mainly “straight” notes.
 2. Set the Notes value accordingly.
If the score is mainly triplets, select the smallest triplet note position used in the score. If it is mainly straight notes, select the smallest “ordinary” note position.
 3. Set the Rests value as described above.
 4. Activate the Auto Quantize option.
 5. Activate the Deviation and Adapt flags if you need them.
-

Interpretation Options



Syncopation

Activate Syncopation when the program adds more ties to notes crossing beats and bar lines than you prefer. The following options are available:

Relax

When Syncopation is “relaxed”, the program applies syncopation in a number of common cases.

Full

Syncopation is on.

Off

Syncopation is off, with no exceptions.

For a “modern” notation of syncopated notes, activate Syncopation.



Without and with Syncopation



Again, without and with Syncopation

Note that you can insert “exceptions” to the Syncopation setting in the Score Settings dialog on the Staff page, by using the Display Quantize tool. You can also create tied notes in various combinations by using the Cut Notes tool.

Consolidate Rests

Activate this when you want small consecutive rests joined into one (an eight note rest and a sixteenth note rest joined to a dotted eighth note rest for example).



Consolidate Rests deactivated and activated

Clean Lengths

If this option is activated, the program interprets the length of your notes differently. A note's length (in the display only) might be extended to the beginning of the next note or to the next Rests "position" for Display Quantize. An example:

- If a note is too short, you may get a rest just after it.
- If Clean Lengths is activated, the rest disappears.



A slightly short eighth note without and with "Clean Lengths".

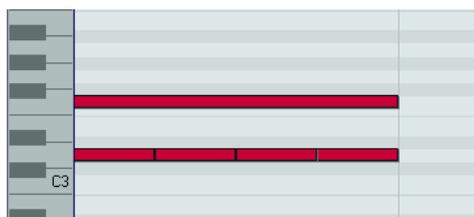
If using Clean Lengths does not help in a particular situation, you can manually resize the offending note(s) or use the Display Quantize tool.

RELATED LINKS

[Inserting Display Quantize changes](#) on page 1056

No Overlap

When notes starting at the same position have different lengths, the program tends to add more ties than you may want. This can be avoided by using No Overlap.



This recording in the Key Editor...



...is displayed like this when No Overlap is deactivated...



...and like this when No Overlap is activated.

You can insert "exceptions" to the No Overlap setting on the Staff page of the Score Settings dialog, by using the Display Quantize tool.

IMPORTANT

Please note that there may be situations when neither of these alternatives is ideal. If you run into such a situation, it can probably be resolved by using polyphonic voicing.

RELATED LINKS

[Polyphonic voicing](#) on page 1089

Shuffle

In jazz it is very common to score a shuffled beat as straight notes, simply to make it more legible.

If the Shuffle flag is activated, the program searches for eighth note or sixteenth note pairs where the second note is played late (with a “swing feel” or as the third note in a triplet). Such pairs are displayed as regular eighth or sixteenth notes instead of triplet-based figures.



Without and with Shuffle

Display Transpose

This is used when preparing parts for instruments that are not scored at the actual concert key. For example, if you want the note C3 to be played by an alto sax, you have to score it as an A3 – nine semitones up. Luckily, the Display Transpose setting takes care of this for you:

- Use the pop-up menu to select the instrument for which you are scoring.
- If the pop-up menu does not list your instrument, you can set the desired transposition with the Semitones value field.

NOTE

The Display Transpose setting does not affect playback or the actual pitch of the notes – it only changes how they are displayed and printed.

You can also insert Display Transpose changes anywhere in the score, by inserting a key change symbol and using the Transpose setting in the Edit Key dialog.

- In the Score Settings dialog, on the Project page (“Chord Symbols” subpage), deactivate the “Use Display Transpose” option if you do not want the chord symbols to be affected by the Display Transpose setting.
- You can disable Display Transpose by deactivating the “Display Transpose” button on the toolbar of the Score Editor.

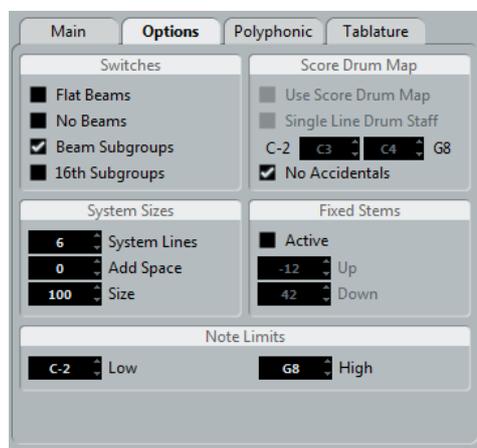
RELATED LINKS

[Display Transpose in the Edit Key dialog](#) on page 1050

[Chord Symbols](#) on page 1160

[Transposing instruments](#) on page 1050

The Options tab



Clicking the Options tab in the dialog brings up another page with additional settings. Below follows a brief description of these, with references to more detailed explanations.

Switches

This section allows you to make beam settings.

Flat Beams

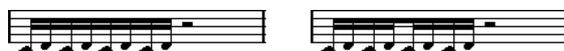
Activate this when you want the beams over notes to be flat (as opposed to slanted).

No Beams

Activate this when you do not want any beaming at all on the staff (for example for vocal scoring).

Beam Subgroups

Use this when you want sixteenth notes displayed under a beam to be divided into groups of four notes.



Without and with Beam Subgroups.

16th Subgroups

Use this when you want even smaller subgroups of sixteenth notes. This setting has no effect if Beam Subgroups is deactivated.



As above, but with 16th Subgroups activated.

RELATED LINKS

[Beam appearance and slant settings](#) on page 1114

[Turning beaming on/off](#) on page 1110

[Handling beam groups](#) on page 1114

System Sizes

This section allows you to set the number of system lines and to control spacing between the lines:

System Lines

The number of lines in a system. For regular scoring, this should be set to 5.

Add Space

Allows you to increase or decrease the space between the lines in a system.

Size

Allows you to set a size for the systems, as a percentage (with 100 % being the default value). In effect, this setting scales the score vertically.

Score Drum Map

When scoring for drums, you can assign a unique note head to each pitch. There is even the possibility to set up different note heads for different note values!

RELATED LINKS

[Scoring for drums](#) on page 1204

Fixed Stems

Activate this if you want all note stems to end at the same vertical position. This feature is perhaps most often used when scoring for drums.



A drum pattern with Fixed Stem length activated

The Up and Down parameters determine which position (relative to the top of the staff) is used for up and down stems, respectively. The graphical display helps you get your settings right.

RELATED LINKS

[Setting up a staff for drum scoring](#) on page 1207

Note Limits

Use the Low and High fields to specify a note range. In the active staff, any notes outside this range are displayed in a different color. When writing a score for a specific instrument, this makes it easy to find notes that are outside of this instrument's note range.

NOTE

If the "Hide Notes beyond limits" option is activated in the Preferences dialog (Scores-Editing page), any notes outside the Note Limits range are hidden.

The Polyphonic tab

This is where you activate and set up split (piano) systems or polyphonic voices (several independent score lines in the same staves).

RELATED LINKS

[Polyphonic voicing](#) on page 1089

The Tablature tab

This tab contains settings for creating tablature scores.

RELATED LINKS

[Creating tablature](#) on page 1209

Polyphonic voicing

About this chapter

In this chapter you will learn:

- How to decide when to use polyphonic voicing.
- How to set up voices.
- How to automatically convert your score to polyphonic voicing.
- How to enter and move notes into voices.

Background: Polyphonic voicing

Polyphonic voicing allows you to resolve a number of situations impossible to score properly otherwise:

- Notes starting at the same position, but with different lengths. Without polyphonic voicing you get unnecessary amounts of ties.



Without and with polyphonic voicing

- Vocal scoring and similar. Without polyphonic voicing, all notes starting at the same position are considered parts of a chord. With polyphonic voicing you can give each voice a stem direction, you can have individual rest handling for each voice, etc.



Without and with polyphonic voicing

- Complicated piano systems. Without polyphonic voicing, you have to resort to a fixed split note setting to decide which notes go on which clef. With polyphonic voicing, the split point can be "floating". The program can even automatically put a bass line on the lower clef for you.



With a split system and with polyphonic voicing

How voices are created

Cubase allows for up to eight voices. The first thing you do is to set them up. This includes "telling" the program which voices belong to the upper clef and which belong to the lower, how you want rests displayed for each voice, etc.

The second thing you do is to move or enter notes into the voices. If you have a recording done already, the program can do much of this work for you, automatically. You might then want to fine-tune by moving one or more notes into another voice, or you might want to add notes to a certain voice.

IMPORTANT

Each voice is polyphonic. In other words, one voice can contain chords.

RELATED LINKS

[Adding and editing notes](#) on page 1064

Overlapping notes

Throughout this chapter you encounter the term “overlapping notes”. Two notes are considered overlapping when they are on the same staff and:

- They start at the same position, but have different note values (for example whole note and a quarter note both at the beginning of a bar), or...



Notes starting at the same position, without and with polyphonic voices.

- One note starts before another has ended. For example a half note at the beginning of a bar and an eighth note at the second beat.



A note that starts before another has ended, without and with polyphonic voices.

Voices and MIDI channels

Internally the program organizes the notes into voices by changing their MIDI channel values. Normally you set it up so that notes with MIDI channel 3 belong to voice 3 etc. Most of the time the link between MIDI channels and voices is totally transparent to you as a user. Sometimes you can take advantage of this relationship, as described later in this chapter.

There are also a few important things to note:

NOTE

When you make a note part of a voice, you are in fact changing its MIDI channel value. However, when you change the voice's MIDI channel values in the setup dialog, this does not affect the notes' MIDI channel setting. This can lead to serious confusion, since the relationship between the notes and the voices is affected. It might even make notes disappear (the program warns if this happens). In other words, do not change the MIDI channels on the Polyphonic tab of the Staff page in the Score Settings dialog after you have put your notes into voices, unless you are absolutely sure of what you are doing.

NOTE

When you open a part that contains notes on different MIDI channels, these notes are in fact already assigned to voices (since notes are assigned to voices using their MIDI channel setting). While this fact can be put to good use, it can also create confusion, and even disappearing notes, as described above.

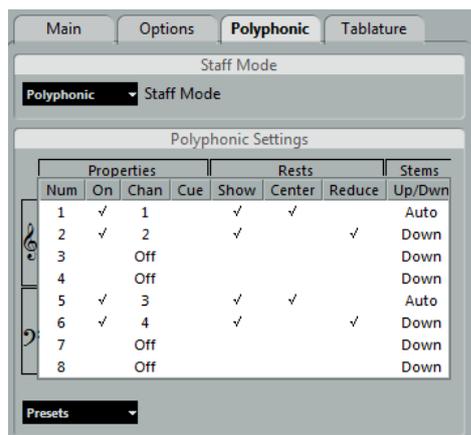
Setting up the voices

To set up your score for polyphonic voicing, proceed as follows:

PROCEDURE

1. Make sure that the desired staff is active.
2. Open the Score Settings dialog and select the Staff page.
3. Select the Polyphonic tab.
4. Open the Staff Mode pop-up menu and select Polyphonic.

This makes the voice list in the lower part of the dialog available. It consists of eight rows, one for each voice. They are numbered and therefore we refer to them as voices 1 to 8.



IMPORTANT

Do not confuse the voice numbers with the MIDI channel setting for each voice.

5. To activate a voice, click in its "On" column, so that a checkmark appears. There are four voices on each staff, for a total of eight. If you activate one "upper" voice and one "lower" voice, you get a split (piano) staff.
6. If you have particular reasons to use specific MIDI channels, change the "Chan" settings for the voices. The program automatically sets each voice to a different MIDI channel. If you do not have good reasons to make changes, leave the settings as they are.

IMPORTANT

If two voices are set to the same MIDI channel, the lower voice is treated as if it were turned off.

7. Click in the "Rests-Show" column to decide for which voices you want rests displayed. A checkmark indicates that rests are shown for a voice. Often you only want rests to be shown for one voice per staff, see below.
8. If you have activated "Rests-Show" for a voice, but do not want rests to be shown in empty bars, click in the "Rests-Reduce" column for that voice. This is especially useful for cue voices.
9. Click in the "Rests-Center" column to determine at which vertical positions rests are shown (for voices with "Rests-Show" activated). If this option is activated for a voice, the rest is put in the vertical center of the staff, when it is not, the rest gets a vertical position based on the pitch of the notes.
10. Decide on a stem direction for each voice, by selecting from the pop-up menu in the Stems column.

If you select Auto, the program makes decisions about which stems go in which direction (just as when not using polyphonic voices). You can always force stem direction for individual notes by using the Flip Stem function.

IMPORTANT

There is a special stem feature for voice 1: If you set this to Auto, the stem direction depends on the pitch of the note as usual – except if there are voice 2 notes in the bar, because then the voice 1 stems are automatically set to Up!

11. If you want the notes in a voice to be smaller than regular notes, put a checkmark in the Cue column for the voice.
12. Click Apply.
The staff is changed to polyphonic voicing, and the program distributes the existing notes into voices according to their MIDI channel values.
At this point you may want to use the Explode function to automatically move notes into the proper voices.

RELATED LINKS

[Cue notes](#) on page 1118

[Flipping the stem of one or several notes](#) on page 1102

[Automatically – the Explode function](#) on page 1095

If the “Some Notes Do Not Belong To Voices...” dialog appears

When you click Apply, a warning may appear saying “Some notes do not belong to any voice and may be hidden. Correct these notes?”.

This warning appears when the staff contains notes with MIDI channel settings which do not match any of the active voices.

If you click the “Correct” button, these notes are moved to active voices. If you click “Ignore”, nothing is changed, and some notes are hidden. However, they are not lost, they appear in all other editors and can be made to appear again in the Score Editor if you change the channel settings for the notes or voices, activate more voices, etc.

About the polyphonic presets

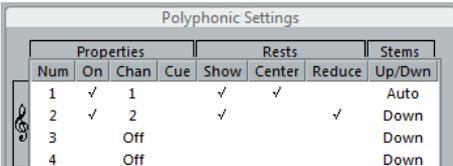
The Presets pop-up menu on the Polyphonic tab (below the list of voices) contains three very useful setups. Instead of making settings by hand, you can select one of the presets, saving some time. The presets are:

Variable Split

This sets up the dialog for two voices, one on each staff, each with auto stem direction. This is a good starting point for a piano staff when the fixed split option does not suffice.

Optimize Two Voices

In this preset, only voices 1 and 2 are activated, and set up like this:



Polyphonic Settings							
Properties				Rests		Stems	
Num	On	Chan	Cue	Show	Center	Reduce	Up/Down
1	✓	1		✓	✓		Auto
2	✓	2		✓		✓	Down
3		Off					Down
4		Off					Down

This way the first voice behaves as in single staff mode, but if there are notes in the second voice, the stems of the first one are set to Up.

Optimize Four Voices

This is like “Optimize Two Voices”, but with two staves. Voices 5 and 6 are activated as well, with the same settings as voices 1 and 2. This is the recommended way to write piano music.

Strategies: How many voices do I need?

Well, it depends

- If you are scoring for vocals, you simply need one voice for each voice, so to speak.
- If you use voices for resolving the problem of overlapping notes, for example when scoring for piano, you need two voices each time two notes overlap. If three notes overlap, you need three voices. In other words you need to check for the “worst case” (largest number of overlapping notes at a certain position) and activate that many. If you do not know how many notes you need when starting out to prepare a score, do not worry, you can add more voices later.
- Voices 1 and 2 on the upper staff and 5 and 6 on the lower are special. These handle “collisions” (notes with small intervals, accidentals that otherwise would come too close, etc.) automatically which the other voices do not. Always use these voices first!

An example: in the situation below, three voices are required. The lowest note overlaps both the “melody” and the chords, so it cannot share a voice with the chords. The chords overlap the melody, so they cannot share a voice either.



RELATED LINKS

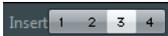
[Overlapping notes](#) on page 1090

Entering notes into voices

When you add new notes, you need to decide which voice they go into:

PROCEDURE

1. Make sure that the extended toolbar is visible.
2. Select the Object Selection tool.
3. If you have a split system, check the voice Insert buttons.
These are displayed after the text “Insert” on the left side on the extended toolbar. Only the voices that are activated on the Polyphonic tab are shown. If the upper staff is active, the voice Insert buttons are numbered 1, 2, etc., otherwise they are numbered 5, 6, etc.

4. If you need to switch the voice icons to the right “clef”, click somewhere in the system you want to insert notes in.
5. Select one of the voices by clicking on the corresponding button.
Any notes you enter from now on are inserted into that voice.

Voice 3 activated for insertion
6. Insert the notes as usual.

7. To switch to another voice, click the corresponding button.
 8. To insert notes into a voice on the other clef, click on that clef and then select a voice using the buttons.
-

RELATED LINKS

[Adding and editing notes](#) on page 1064

Symbols and voices

Later in this manual you will learn about symbols that can be added to the score. Many of these symbols must also be put into a particular voice.

RELATED LINKS

[Important! – Symbols, staves, and voices](#) on page 1128

Checking which voice a note belongs to

When you select one single note, the corresponding voice button on the extended toolbar is selected. This allows you to quickly find out which voice a certain note is in (after you have used the Move To Voice function, for example).

- When you step through the notes using the **Left Arrow/Right Arrow** keys, you only step through the notes in one voice at a time.
This can be used as a quick way to check which notes belong to the same voice as some other note.

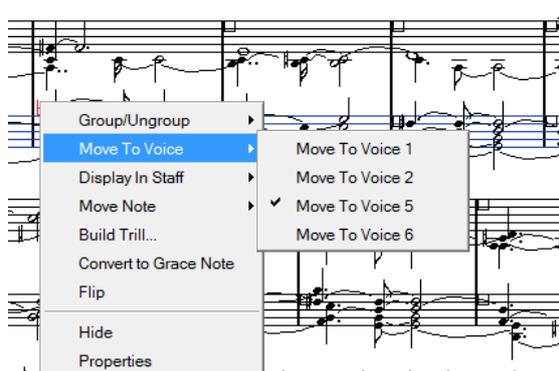
Moving notes between voices

Manually

To manually move notes to another voice, proceed as follows:

PROCEDURE

1. Select the note(s) you want to move to a particular voice.
2. Right-click on one of the notes and select “Move to Voice” from the context menu.



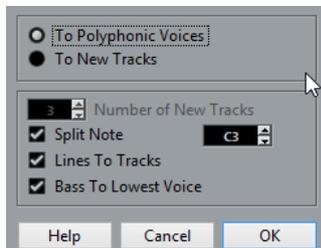
3. On the submenu, select the voice to which you want to move the notes.
Only the activated voices are available on the menu.
You can also press **Ctrl/Cmd** and click a voice Insert button on the extended toolbar to move the selected notes to the corresponding voice.
You can also assign key commands for this in the Score Functions category of the Key Commands dialog on the File menu.
-

Automatically – the Explode function

The Explode function distributes notes, either onto new tracks or into polyphonic voices:

PROCEDURE

1. Open the Scores menu and select “Explode” from the Functions submenu.



The Explode dialog, set to create polyphonic voices.

2. Make sure that “To Polyphonic Voices” is selected at the top of the dialog.
3. Use the options in the lower half of the dialog to set up the criteria for the split. Choose from the following options:

Option	Description
Split Note	Use this to move all notes below a certain pitch to another voice.
Lines To Tracks	Use this when you want all musical “lines” to be put in one voice each. The notes with the highest pitch goes to the first voice, the notes with the second highest pitch goes to the second, and so on.
Bass To Lowest Voice	If this option is activated, the lowest notes always ends up in the lowest voice.

4. Click OK.
The notes are distributed to different voices.
-

RELATED LINKS

[The Explode function](#) on page 1058

Alternative ways of handling voices

Below we suggest further “advanced” ways of putting notes into voices. This is based on the relation between voices and MIDI channels, so please make sure that you understand how this connection works.

- Cubase Pro only: You can use the Logical Editor to put notes into voices, based on other more complex criteria, like for example their pitch and length. This is done by setting up the Logical Editor so that the notes that meet the criteria get their MIDI channel changed to that of their voice.
- When you enter notes using step input you can change the MIDI channel on your input device and directly enter notes into separate voices.
- You can play back each voice on a different MIDI channel, simply by setting the track to Any. This can be used as a convenient way of “proof-hearing” each voice separately.
- You can use the Input Transformer to assign a certain key range to a MIDI channel, and thereby automatically put notes into voices when recording.

- For brass and vocals, you might record each voice on its own track, and use the “Merge All Staves” function to automatically copy each recording to a separate voice on a new track.
- When you have assigned parts to voices, you can use the Extract Voices function to create one track out of each voice.

RELATED LINKS

[The Logical Editor](#) on page 830

[Automatic polyphonic voicing – Merge All Staves](#) on page 1098

[Converting voices to tracks – Extract Voices](#) on page 1099

Handling rests

With polyphonic voices, you often get more rest symbols than desired.

- If a voice does not need any rests at all, you can deactivate rests separately for this voice on the Polyphonic tab of the Staff page in the Score Settings dialog.
- If you only need rests from one voice on a staff, activate Rests–Center for that voice (this is done in the same dialog). If two or more voices have rests, deactivate Rests–Center. The program then automatically makes sure the rests do not “collide” in the score, by adjusting their vertical position.
- To avoid having several rests displayed in empty bars, you can activate the Rests–Reduce option for all voices (that have rests) except one. This option causes the program to hide rests in empty bars.
- You can use the Hide feature to totally remove individual superfluous rests from the score.
- You can use the Object Selection tool to manually move rests up/down or sideways to adjust the “picture”.
- If needed you can add “rest symbols” (rests that do not affect the playback data in any way) by using the symbols.

RELATED LINKS

[Hiding/showing objects](#) on page 1188

Voices and Display Quantize

When you insert Display Quantize changes, you can either apply the settings to all voices (by **Alt**-clicking with the tool) or to the current voice only.

IMPORTANT

If “Display Quantize Tool affects all Voices” is activated in the Score Settings dialog on the Project–Notation Style subpage (Miscellaneous category), the Display Quantize settings always affects all voices (even if you do not press **Alt** and click).

Making Display Quantize settings for one single voice allows you to do two things:

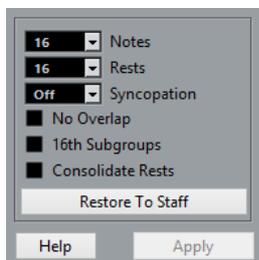
- Make each voice have its own Display Quantize settings by inserting a Display Quantize event for each voice, at the beginning of the staff. This is valid for the entire staff, until another Display Quantize event is inserted.
- Insert Display Quantize “exceptions” anywhere in the score, independently for each voice.

PROCEDURE

1. Make sure that the “Display Quantize Tool affects all Voices” option is deactivated.
2. Select the voice for which you want to insert a Display Quantize event.

This is done by clicking at the corresponding voice button on the extended toolbar as described above, or by selecting a note that belongs to this voice.

3. Select the Display Quantize tool.
4. Click at the position at which you want to insert the event.
The Display Quantize dialog appears.



5. Fill out the dialog.
6. Click Apply.

RELATED LINKS

[Inserting Display Quantize changes](#) on page 1056

[Display Quantize and Interpretation Options](#) on page 1082

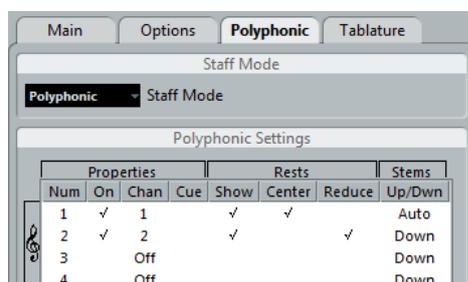
Creating crossed voicings

Often, for example in vocal scoring, you have crossed voicings on one system. You can of course move notes manually into voices to get the stem direction and other note properties right, but there is a quicker way. Let's explain how to do this by example. Without using polyphonic voicing, you have entered this:



PROCEDURE

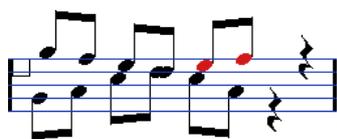
1. Open the Score Settings dialog on the Staff page and select the Polyphonic tab.
2. From the Staff Mode pop-up menu, select Polyphonic.
3. Activate voice 1 and 2 only, and make settings for them as in the picture below.



4. Click Apply.
The staff is in Polyphonic staff mode, but all notes are still in the same voice.
5. Open the Scores menu and select "Explode" from the Functions submenu.
6. In the dialog that appears, select the "To Polyphonic Voices" option and activate "Lines To Tracks".
Leave the other options off.

7. Click OK.
The notes have now been split in two “lines”, each in a separate voice. However, from the middle of the bar, notes that are in voice 1 should be in voice 2 and vice versa.

8. Select the two notes that you want to be moved from voice 1 to voice 2.



Two notes in voice 1 selected.

9. Move the notes to voice 2.
The quickest way to do this is to press **Ctrl/Cmd** and click the voice Insert 2 button on the extended toolbar.



Two notes moved to the right voice.

10. Select the two notes that you want to be moved to voice 1 and move them, too.



All notes in the right voices.

RESULT

The voicing is now correct, as you can tell from the stem directions. However, there is still some work to do on the notes graphical positions and the display of stems and beams for some of the notes. When you have made those adjustments, the score may look like this:



After making graphical adjustments.

RELATED LINKS

[Graphic moving of notes](#) on page 1118

[Manual adjustment of beams](#) on page 1115

Automatic polyphonic voicing – Merge All Staves

If you have already created some tracks which look and play back as they should, and you want to combine these into one track with polyphonic voices, there is a special function on the Scores menu for this:

PROCEDURE

1. Open the tracks (up to four) in the Score Editor.
2. Open the Scores menu and select “Merge All Staves” from the Functions submenu.

Now a new track is created and shown in the score. The track has polyphonic voices activated, and the four original tracks are assigned to one voice each (voices 1, 2, 5 and 6 are used).



Before...



...and after merging the staves

Furthermore, all non-linked symbols that belong to the staff that become the first polyphonic voice in the merged staff are copied. They have the same positions as the original symbols.

IMPORTANT

When you later play back the music, you need to mute the four original tracks, or you get double notes.

Converting voices to tracks – Extract Voices

This function does the opposite of “Merge All Staves” – it extracts polyphonic voices from an existing track and creates new tracks, one for each voice.

PROCEDURE

1. Open a track containing 2 to 8 polyphonic voices in the Score Editor.
2. Open the Scores menu and select “Extract Voices” from the Functions submenu.

A number of new tracks is created and added to the display of the Score Editor. Each track contains the music from one polyphonic voice. If there were non-linked symbols in the original track, each new track gets a copy of these symbols.



IMPORTANT

When you later play back the music, you need to mute the original track (the one with polyphonic voices), or you get double notes.

Additional note and rest formatting

About this chapter

In this chapter you will learn:

- How to control stem direction.
- How to control beaming, and create cross-staff beaming.
- How to make detailed adjustments to note appearance.
- How to perform “graphic moving” of notes.
- How to create grace notes.
- How to create tuplets.

Background: Note stems

The direction of stems is governed by five things:

- How notes are grouped under beams.
- Any manual manipulation of beams.
- The Flip Stems function.
- How the note information is set for each note.
- How the Polyphonic tab on the Staff page of the Score Settings dialog is set up (if you use polyphonic voices).

The order of this list corresponds to the priority of the settings, i. e. on conflict, the grouping under beams has the highest priority and the settings made on the Polyphonic tab the lowest.

IMPORTANT

If you have edited the stem length of a note and then flip it, the stem is reset to default length.

IMPORTANT

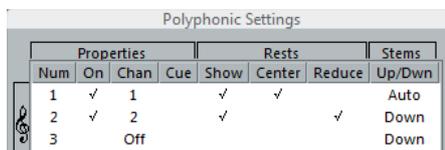
If you have activated the “Fixed Stems” option on the Staff page of the Score Settings dialog (Options tab), a lot of the automatic stem length settings are ignored. However, you can still edit the stem length and direction of individual notes.

RELATED LINKS

[Fixed Stems](#) on page 1088

Setting stem direction

In polyphonic voices



Properties				Rests			Stems
Num	On	Chan	Cue	Show	Center	Reduce	Up/Down
1	✓	1		✓	✓		Auto
2	✓	2		✓		✓	Down
3		Off					Down

In the Score Settings dialog, on the Staff page (Polyphonic tab), the stem direction can be set separately for each voice.

Using Flip Stems

Flipping the stem of one or several notes

PROCEDURE

1. Select the notes.
2. Click the Flip icon on the extended toolbar.
All the stems in the selection are now flipped. Those that pointed up now point down and vice versa.



The Flip icon

You can also assign a key command for this. In the Key Commands dialog on the File menu, the command is called "Flip" and is found in the Score Functions category.

You can also right-click a note or a selection of notes and select the Flip option from the context menu.

Flipping the stems of notes grouped under a beam

PROCEDURE

1. Select any note in the group.
2. Invoke Flip as described above.
The entire group is now flipped.



Before and after the flip. No matter which note you select, the entire group is flipped.

IMPORTANT

This does not work if you have adjusted the slanting of the beam by dragging. If you have, you must first reset the beam.

RELATED LINKS

[Stem length](#) on page 1103

Independent stem direction under a beam

If you need stems attached to the same beam to go in different directions, this is achieved by dragging the beam's start and end points. This feature is available in Page Mode only.



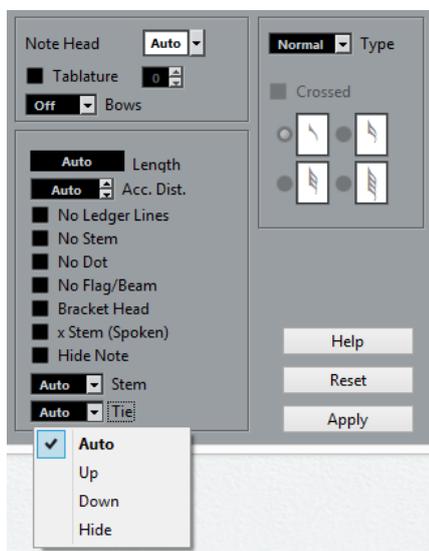
Independent stem direction under a beam

RELATED LINKS

[Manual adjustment of beams](#) on page 1115

Stem direction in the Set Note Info dialog

The Set Note Info dialog can be opened by double-clicking on a note head. In its lower left corner you can find a pop-up menu for setting stem direction.



- Setting this pop-up menu to Up or Down is the same as using Flip Stems.
- Setting this pop-up menu to Auto makes the program set the stem direction automatically.

RELATED LINKS

[Using Flip Stems](#) on page 1102

Stem length

Adjusting stem length (Page Mode)

PROCEDURE

1. Click on the end of the stem so that a handle appears.



2. If you want to change the lengths of several stems at the same time, hold down **Shift** and select these stems as well.
 3. Drag the stem handle (on one of the selected stems) up or down.
All selected stems are lengthened or shortened by the same amount.
-

Resetting stem length and beam slants

PROCEDURE

1. Make sure that the filter bar is visible.
If the filter bar is not visible, click the “Set up Window Layout” button on the toolbar and select the Filters option.
2. Make sure that the “Stems/Beams” checkbox is activated on the filter bar.
Now, below the notes where stems have been changed or beam slant adjusted manually, the word “Stem” appears.
3. Click on the “Stem” text to select it.
4. Press **Backspace** or **Delete** to remove it.



Before and after deleting the “Stem” item.

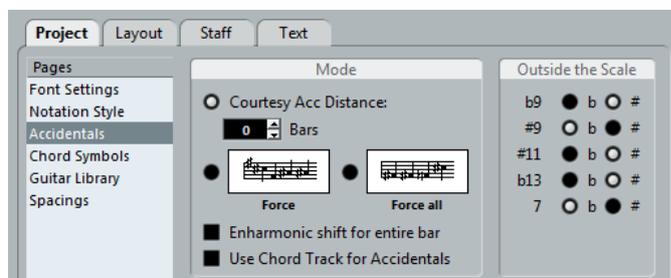
Accidentals and enharmonic shift

Making global settings

In the Score Settings dialog, on the Project page (Accidentals subpage), you can find a number of options for how accidentals are displayed in the score. Once set, these are valid for all tracks in the project. Proceed as follows:

PROCEDURE

1. Open the Score Settings dialog on the Project page and select the Accidentals subpage from the Pages list.



You have the following options:

- Activate the “Courtesey Acc Distance” option and enter a value in the Bars field.
This determines after how many measures courtesey accidentals are shown. If you set this to “0”, notes outside the scale get accidentals and no courtesey accidentals are shown.
- Activate one of the following options:

Option	Description
Force	Notes outside the scale get accidentals, and accidentals are repeated even within the same bar.
Force all	Every single note in the score gets an accidental.

2. In the “Outside the Scale” area, you can decide how five of the most common intervals outside the scale are displayed, as sharps or as flats.

IMPORTANT

If you activate the “Accidentals for Each Note” option in the Score Settings dialog, on the Project–Notation Style subpage (in the “H.W. Henze Style” category), all notes are displayed with accidentals (even tied notes).

IMPORTANT

If you activate “Use Chord Track for Accidentals”, the chord track is used to determine the accidentals.

RELATED LINKS

[Chord Functions](#) on page 789

Enharmonic Shift

If one or several notes are not displayed with the accidentals that you want, you can perform an Enharmonic Shift operation on them.

PROCEDURE

1. Select the notes to be shifted.
 2. Click the desired option on the extended toolbar.
 3. If you want the enharmonic shift to be repeated in the whole bar, activate the “Enharmonic shift for entire bar” option in the Score Settings dialog (Project–Accidentals subpage).
-

Extended Toolbar



Use these buttons when you want regular Enharmonic Shifting (select one option).



Use this button when you want to deactivate Enharmonic Shifting for the notes.



Use this button when you want to hide the accidental completely.



Use this button when you want to create a “help accidental” for the selected notes only.



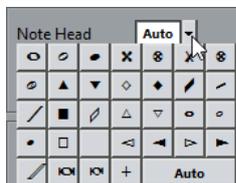
Use this button when you want to enclose the accidental in parentheses. To remove these, select “off”.

Changing the note head shape

PROCEDURE

1. Select the notes for which you want to change the note head shape. Make sure not to select the stems, only the note heads.

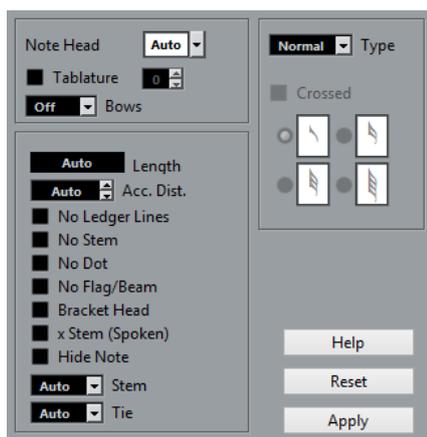
2. Open the Set Note Info dialog.
To do so, double-click one of the notes, click the "i" button on the extended toolbar, or right-click on a note head and select "Properties" from the context menu.
3. Open the "Note Head" pop-up menu in the top left corner of the dialog.
The pop-up menu contains all the available head shapes and an "Auto" option, which selects the normal default shape for the note.



4. Select one of the note heads.
 5. Click Apply.
The settings are applied to the selected notes.
 6. If you like, select other notes and make settings for them.
 7. When you are done, close the dialog.
-

Other note details

Each note has a number of settings in the Set Note Info dialog.



The Set Note Info dialog contains the following settings:

Note Head

Used for selecting custom note head shapes.

Tablature on/off and number

Used for creating or editing tablature. This feature can be used for individual notes or together with the automatic tablature function.

Bows

Used for adding bow up/bow down articulation. When selecting "Off", bow symbols are not displayed for the selected notes.



Bow up and down

Length

This allows you to change the displayed length of notes, without affecting playback. Note that the display quantize settings still apply. To reset this value to "Auto" (so that notes are displayed according to their actual length), scroll the value down to zero.

Accidental Distance

Use this to specify how far from the note, horizontally, you want the accidental. The higher the number the greater the distance.

No Ledger Lines

Turns off ledger lines for notes with high or low pitches.



With and without ledger lines

No Stem

Hides the note stem completely.

No Dot

Hides the dot from a dotted note.

No Flag/Beam

Activate this to hide the flags or beams of the selected notes.

Bracket Head

If this option is activated, notes are displayed with brackets:



Bracket Head on and off

X Stem (Spoken)

If this option is activated for a note, it is displayed with an x across its stem. This is normally used to indicate spoken words.



Hide Note

Activating this checkbox hides the selected notes.

Stem

Determines the stem direction.

Tie

Determines the direction of ties. When this is set to "Auto", the program chooses a tie direction depending on the stem direction of the tied notes.

Type

Determines the note type. There are four options:

- Normal. This is how notes usually are displayed.
- Grace. When this is selected, notes are displayed as grace notes.
- Cue. When this is selected, notes are displayed as cue notes (smaller notes, often used as "guide notes" or optional lines).

- **Graphic.** These are special notes, useful for example for guitar notation (pull-offs) and trills (as “help notes”, indicating which notes to trill between). In both these cases the “No Stems” option could be useful.

Graphic notes are not included in the “automated cutting”. They are positioned after the notes they “belong to” (as opposed to grace notes).

Crossed

Activate this option, when you want the stem to be crossed by a slanted line (to indicate that the note is a grace note).

Grace note options

These options are available when Grace is selected on the Type pop-up menu.

RELATED LINKS

[Changing the note head shape](#) on page 1105

[Creating tablature](#) on page 1209

[Display Quantize values](#) on page 1083

[Using Flip Stems](#) on page 1102

[Grace notes](#) on page 1120

[Cue notes](#) on page 1118

[The Cut Notes tool](#) on page 1117

Coloring notes

You can assign colors to notes using the Event Colors pop-up menu on the toolbar.

PROCEDURE

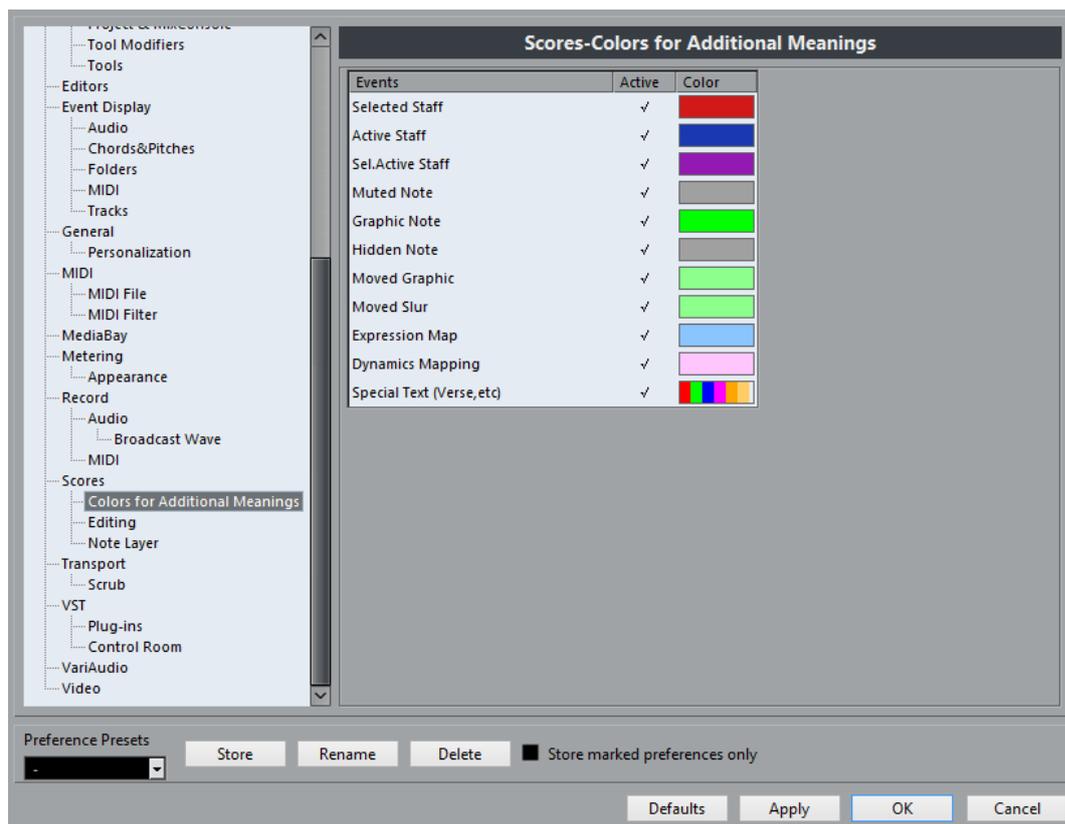
1. Simply select the notes for which you want to use colors, open the Event Colors pop-up menu on the toolbar and pick a color.
Only the note heads are colored. Note that the color is only visible once the notes have been deselected.
2. On the far right on the Score Editor toolbar you can find the Hide Colors button.
If you assigned colors to some or all of the notes in your score, this button allows you to switch between display of colored or uncolored notes. This may help you to find selected notes among other colored notes.

Scores Colors for Additional Meanings

If the Preferences dialog (Scores–Colors for Additional Meanings page) you can specify different colors for elements in the score in order to indicate that they are “special” in any way. You can for example choose a color for a “Moved Graphic” or a “Moved Slur”. These objects are colored accordingly when they are moved from their default positions.

PROCEDURE

1. Open the Preferences dialog (Scores–Colors for Additional Meanings).



2. Click in the Active column to activate this function for the corresponding element.
3. Click in the Color field to the right to select a color.

When color-printing a score, you get the colors you selected for the notes. When you are using a black-and-white printer, the notes appear in black (notes that have not been assigned a color) and different shades of gray (depending on how bright/dark a color was used for the note).

RELATED LINKS

[Moving note symbols](#) on page 1144

Copying settings between notes

If you have made various settings in the Set Note Info dialog for a note, and want to use these settings for other notes as well, there is an easy way to do this:

PROCEDURE

1. Set up the first note as desired.
This includes the settings in the Set Note Info dialog, but also any note-related symbols such as accents, staccato, articulation, etc.
 2. In the score, select the note and select "Copy" from the Edit menu.
 3. Select the notes to which you want to copy the attributes.
 4. Right-click the notes to which you want to copy the attributes, and select "Paste Attributes" from the context menu.
The selected notes now get the attributes of the first, copied note, but their pitches and note values remain unchanged.
-

RELATED LINKS

[Adding note symbols](#) on page 1129

Handling beaming

Turning beaming on/off

Beaming is enabled/disabled independently for each staff.

PROCEDURE

1. On the Staff page in the Score Settings dialog, click the Options tab.
 2. To turn off beaming, activate No Beams and click Apply.
Even if beaming is deactivated for the staff, you can put some notes under beams, as described below.
-

Grouping

When beaming is on, the program automatically groups notes under beams. However, there are a number of ways to determine how notes are grouped.

Using the Edit Time Signature dialog

The time signature for the score naturally affects grouping. But you can control this yourself by creating a composite time signature used only for grouping:

PROCEDURE

1. Open the Edit Time Signature dialog by double-clicking the time signature symbol for the staff.
2. Set up the numerator with the grouping you desire.
If you for example want eighth notes in two groups of three and one group of two, enter 3+3+2.
3. Set the denominator, if necessary.
4. Activate "For Grouping Only".



5. Click OK.

IMPORTANT

Note that the "For Grouping Only" setting only affects the way the numerator is divided. Any changes you make to the "sum" of the numerator number or the denominator result in a change of actual time signature in the project. If you need a grouping which cannot be entered in the current time signature, you have to group notes manually, see below.

Regular grouping of a number of eighth notes or smaller (“Beam”)

If the grouping the program assigns is not the one you want, you can put any selection of eighth notes or smaller under a beam:

PROCEDURE

1. Select at least two notes, where you want the beam to begin and end.
All notes between these two notes are grouped under a beam.
2. Click the Group Notes icon on the extended toolbar or right-click on one of the notes to be grouped and select “Beam” from the “Group/Ungroup” submenu of the context menu.



The Group Notes icon



Before and after grouping

Double-clicking on the “Grouping” text opens the Grouping dialog, allowing you to adjust the “note value” for the symbols.

Grouping quarter notes or larger under a beam (“Brillenbass”)

It is also possible to use the grouping feature for notes that are not displayed with beams (quarter notes, half notes, etc.). The result are so called “Brillenbass” symbols, commonly used for indicating repeated accompaniment patterns, etc.



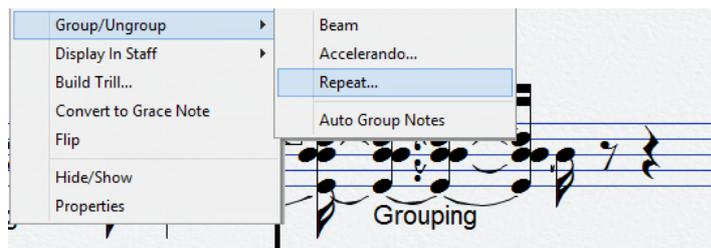
- Double-clicking on the “Grouping” text opens the Grouping dialog, allowing you to adjust the “note value” for the symbols.

Grouping notes using Repeats

To show Repeats for the grouped notes, proceed as follows:

PROCEDURE

1. Make sure that the filter bar is visible in the Score Editor.
If the filter bar is not visible, click the “Set up Window Layouts” button on the toolbar and select the Filters option.
2. Activate the “Grouping” checkbox in the filter bar.
Now, you see the text “Grouping” below all groups you have created.
3. Select the desired notes.
4. Right-click on one of the notes and from the Group/Ungroup submenu, select “Repeat...”



5. In the dialog that appears, use the radio buttons to select the desired note value for the repeats.



In this example, the "Repeat" feature is used to display two pairs of sixteenth notes as two eighth notes with "repeat bars". Note that the second and fourth sixteenth note have only been hidden – playback is not affected!

6. Click OK to close the dialog.
Double-clicking on the "Grouping" text opens the Grouping dialog, allowing you to adjust the "note value" for the symbols.
-

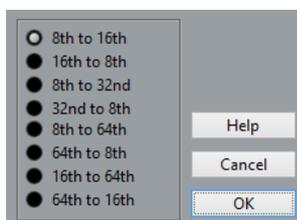
Creating an accelerando/ritardando

To create an accelerando/ritardando, proceed as follows:

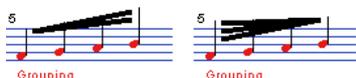
PROCEDURE

1. Select the notes as described above and select "Accelerando" from the Group/Ungroup submenu.

A dialog appears.



2. Use the radio buttons to select the desired combination (i. e. define whether you want an accelerando or a ritardando and specify the desired note values) and click OK to close the dialog.



Example for accelerando (left) and ritardando (right)

Double-clicking on the "Grouping" text opens the Grouping dialog, allowing you to select another combination.

The Grouping dialog

As described above, the Grouping dialog can also be opened by double-clicking an existing grouping text in the score.

- Which Grouping dialog appears depends on the grouping option you used for the notes (Beam, Repeats or Accelerando, see above).

Removing groups

If you have created a group as described above and want to remove it, proceed as follows:

PROCEDURE

1. Make sure that the "Grouping" checkbox is activated in the display filter bar.
2. Select a group by clicking on its "Grouping" text.
3. Press **Backspace** or **Delete**.
The grouping is removed.



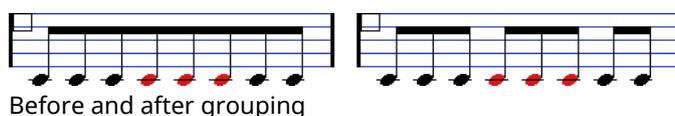
If you need to remove all groups from the score, hold down **Shift** and double-click on the first "Grouping" text.

This selects all "Grouping" symbols, so you can delete them all at once by pressing **Backspace** or **Delete**.

Removing a note from a group

There is no dedicated "ungroup" command, simply because it is not needed. A group can consist of one note. In other words...

- To remove one note at the end of a group, select it and proceed with grouping as above.
- If you select notes in the middle of a beam and then group, three groups are created.



Automatic grouping

The program can also go through the selected notes and automatically create grouping for you, where it is deemed suitable.

PROCEDURE

1. Select the notes that you want checked for auto-grouping.
Typically, you would select all notes on the track by using the Select All command on the Edit menu.
2. Right-click on one of the notes and select "Auto Group Notes" from the context menu.



Before and after using auto grouping in 4/4

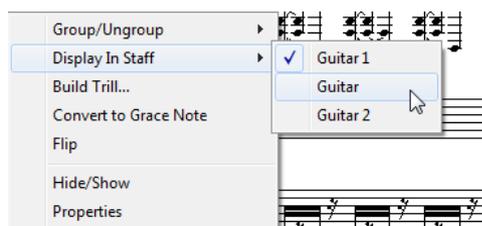
In 4/4 you get for example two groups of eighth notes per bar, in 3/4 you get one group per bar, etc.

Cross-staff beaming

To create a beam that extends from one staff to another, proceed as follows:

PROCEDURE

1. Set up a split or polyphonic voicing system or open the Score Editor with more than one track.
2. Set up a beam of notes (using the group command) and adjust their pitches so that they are correct even though some of the notes are on the wrong staff.
Use the info line to edit the pitches if they are very low or high.
3. Select the notes that should appear on the other staff.
4. Select "Display in Staff" from the context menu for a selected note and select a staff from the submenu.



The notes are “graphically” moved to the selected system, but keep their actual pitch.



Before and after moving a note to the lower staff

5. If needed, adjust the beam appearance.



Cross-staff beaming with the beam in the middle

This does not move the affected notes to another track, but merely displays them as if they belonged to the other staff.

RELATED LINKS

[Manual adjustment of beams](#) on page 1115

Handling beam groups

There are two settings for groups under a beam, Beam Subgroups and 16th Subgroups, both found on the Options tab on the Staff page of the Score Settings dialog. If “Beam Subgroups” is activated, the program displays subgroups after four sixteenth notes under a beam. If you also activate “16th Subgroups”, subgroups appear after only two sixteenths.



Beam Subgroups off



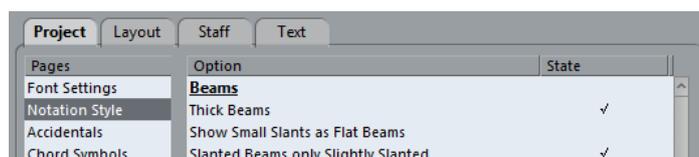
Beam Subgroups on



On with 16th Subgroups activated

Beam appearance and slant settings

Global settings



In the Score Settings dialog, on the Project page (Notation Style subpage), you can find the following three options for beam appearance in the Beams category:

- **Thick Beams.**
Activate this if you want beams to be displayed as thick lines.
- **Show Small Slants as Flat Beams.**
If this option is activated, beams that would be only slightly slanted are displayed flat.



Without and with "Show Small Slants as Flat Beams"

- **Slanted Beams only Slightly Slanted.**
Activate this if you only want a slightly slanted beam even though there might be a significant pitch difference between the notes under the beam.



Without and with "Slanted Beams only Slightly Slanted"

IMPORTANT

These settings are global for all staves.

Staff settings

In the Score Settings dialog, on the Options tab of the Staff page, you can find a couple of settings for beams as well:

Flat Beams

Activate this when you do not want any slant at all, no matter the pitch difference of the notes under the beams.

No Beams

Activate this when you do not want any beams at all.

Manual adjustment of beams

For very detailed control you can manually adjust the beam slant:

PROCEDURE

1. Group and flip notes and adjust the settings described above until the beams are as close as possible to how you want them.
2. Click on the corner made up by the beam and the stem.
A handle appears on the corner of beam and stem.



A beam handle

3. Drag the handle up or down.
The slant of the beam changes.



Dragging a handle and the effect it has.

NOTE

You can adjust the distance between notes and their beam without changing the beam slant. Select both handles of a beam (by pressing the **Shift** key while selecting the second handle) and drag one of the handles up or down.

Mixed stem direction

By dragging the beam handles you can put the beam between the note heads:



Putting the beam between the notes

About tied notes

Sometimes, notes are displayed as two or more notes tied together. Generally, there are three different occasions when this happens:

- When a note is of an “uneven” length that cannot be displayed without tying together two or more notes of different note values.
- When a note crosses a bar line.
- When a note crosses a “group line” within a bar.

The last case requires some explanation: Cubase uses a “cutting mechanism” that automatically creates tied notes depending on the length and position of the notes. For example, a quarter note is cut in two and tied if it crosses a half note beat, and an eighth note is cut in two and tied if it crosses a quarter note beat:



1. This quarter note is cut.
2. This eighth note is cut.

However, this is not always what you want. There are three ways to affect the cutting mechanism:

Syncopation

If the Syncopation option is activated on the Main tab of the Staff page in the Score Settings dialog, Cubase is less prone to cut and tie notes. For example, the second quarter note in the figure above would not have been cut if syncopation had been activated.

The Syncopation setting affects the whole track, but you can also make syncopation settings for separate sections in the score, by inserting display quantize events.

RELATED LINKS

[Inserting Display Quantize changes](#) on page 1056

Time signature changes

By inserting time signature changes, you can change the way notes are cut. This is done in the same way as when you specify how beamed notes are grouped.



With a regular 4/4 time signature



With a composite time signature (3+2+3 eighth notes)

RELATED LINKS

[Grouping](#) on page 1123

The Cut Notes tool

By using the Cut Notes tool, you can disable the automatic cutting mechanism in a bar, and insert manual cuts at any given position in the score.

PROCEDURE

1. Select the Cut Notes tool.



2. Select a suitable quantize value from the “Quantize Presets” pop-up menu. As usual, this determines where you can click.
3. When you are using polyphonic voices, select the voice you want to make settings for.
4. Click in the bar containing the notes that you want to cut manually, at the position you want them cut.

This inserts a cutflag event in the bar at the position you clicked. If you hold down **Alt**, a cutflag event is inserted for all voices in a polyphonic staff.

A half note, placed at 2.1.3. This is by default cut at 2.3.1 (the middle of the bar). When you click at the position 2.2.1, a cutflag event is inserted.



As a result, the regular cutting mechanism is disabled and the note is cut at the position you clicked instead.

The following rules apply to cutflag events:

- If a bar contains a cutflag event, the automatic cutting mechanism is disabled within that bar.
- All notes or rests that start before and end after a cutflag event are cut at the position of the event.
- To display cutflag events, make sure that “Cutflag” is activated on the filter bar.
- To remove a cutflag event, either click again with the Cut Notes tool at the same position, or select it and press **Backspace** or **Delete**.

Other options for tied notes

Tie direction

You can set the direction of the tie manually in the Set Note Info dialog.

RELATED LINKS

[Other note details](#) on page 1106

Flat ties

If you prefer ties to be displayed as flat lines, rather than regular “curved” ties, activate the “Flat Ties” option in the Score Settings dialog, on the Project–Notation Style subpage (H.W. Henze Style category).

Graphic moving of notes

There might be instances where the “graphical” order of the notes is not the one you want. In this case, you can move notes without affecting the score or playback in any way. This can be done with the Layout tool or using your computer keyboard.

By using the Layout tool

PROCEDURE

1. Select the Layout tool on the Score Editor toolbar.
2. Click again on the tool button to open the Mode pop-up menu and select the desired option.
3. Click on the note and drag it to the desired position.
Note that movement is restricted to horizontally only.

NOTE

You can also automatically select all notes making up a chord, by holding down **Alt** and clicking on one of the notes with the Layout tool.

Modes for the Layout tool

The following modes are available:

Move Single Object

In this mode, only the object you move with the Layout tool is affected (moved). Use this if you want to “correct” the position of one single note in the score, for example.

Move Notes and Context

In this mode, other score objects are moved accordingly when you move a note with the Layout tool. Use this mode if you want to correct the display of all score objects within a bar rather than modifying single note positions.

By using the computer keyboard

You can assign key commands for moving objects graphically. In the Key Commands dialog on the File menu, the commands are found under the Nudge category and called Graphical Left, Graphical Right, Graphical Bottom, and Graphical Top (only the Graphical Left and Graphical Right commands apply to notes).

After assigning key commands, you select the notes that you want to move and press the assigned keys to adjust their graphical position.

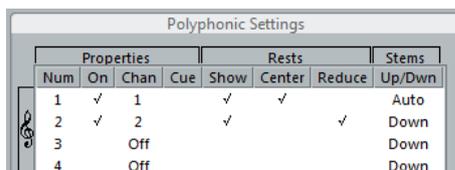
Cue notes

You can create cue notes by using voices or by converting individual notes into cue notes.

Setting a voice to display cue notes

PROCEDURE

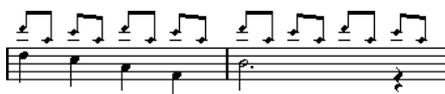
1. Open the Score Settings dialog on the Staff page and select the Polyphonic tab.
2. Click in the "Cue" column for the voice, so that a checkmark appears.
3. Decide how to handle rests for the voice.
You might for example leave "Rests-Show" activated and activate "Reduce". If you do, you get rests in this voice, but not as many as otherwise. Empty bars, for example, do not have any rests at all.



Polyphonic Settings							
Properties			Rests			Stems	
Num	On	Chan	Cue	Show	Center	Reduce	Up/Down
1	✓	1		✓	✓		Auto
2	✓	2		✓		✓	Down
3		Off	✓				Down
4		Off					Down

"Cue" activated for voice 3

4. Close the dialog.
5. Move the notes into the cue voice.



An example of a cue note voice

RELATED LINKS

[Setting up the voices](#) on page 1091
[Polyphonic voicing](#) on page 1089

A quick example

Let's say you have a flute part and want some cue notes for it:

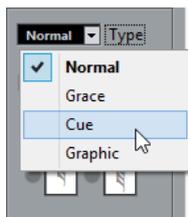
PROCEDURE

1. Switch on polyphonic voices and activate voice 1 and voice 2.
 2. Set voice 2 to "Auto" stem direction and centered rests.
 3. Set up voice 1 to be a cue voice, with hidden rests and stems pointing up.
 4. Insert the cue notes into voice 1.
-

Turning individual notes into cue notes

PROCEDURE

1. Select one or several notes.
2. Double-click one of the notes.
The Set Note Info dialog appears. You can also click the "i" button on the extended toolbar, or right-click on a note head and select "Properties" from the context menu to open this dialog.
3. Select Cue from the Type pop-up menu.



4. Click Apply.
The settings are applied to the selected notes.
 5. Close the dialog.
-

Grace notes

You can turn any note into a grace note. Grace notes are considered to be notes without lengths. This means that once a note is turned into a grace note it does not affect the rest of the score display in any way.



Before and after converting to grace notes. Note that after the conversion, the grace notes no longer “interfere” with the interpretation of the other notes.

NOTE

Grace notes are always positioned just before the next note on the staff. If there is no note after a grace note on the staff, the grace notes are hidden!

Creating grace notes manually

PROCEDURE

1. Locate the note for which you want a grace note.
 2. Insert one or more new notes just before it.
The note value and exact position of the note is not important. However, the pitch of course is.
From here on there are two ways to go:
 - Select the notes and open the Set Note Info dialog, either by double-clicking on one of the note heads or by clicking the “i” icon on the extended toolbar.
In the dialog, select the Grace note type.
 - Right-click on one of the notes and select “Convert to Grace Note” from the context menu.
This turns the note into a grace note without opening any dialog.
-

Grace notes and beaming

If two grace notes are at exactly the same position (the same tick), they are put onto the same stem, as a chord. If multiple grace notes in front of the same note are put on different positions (even if they are only one tick apart), they are grouped under a beam.

It is possible to have beamed grace notes overlapping a beam of regular notes, as in the example below:

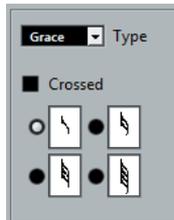


Grace notes in the middle of a group of regular notes

Editing a grace note

PROCEDURE

1. Select one or several grace notes and open the Set Note Info dialog.



2. Select a note value for the stem.
 3. Activate Crossed, if needed.
If this option is activated, the stem is crossed by a slanted line, to further indicate that the note is a grace note.
 4. Click Apply.
The settings are applied to the selected notes.
 5. Close the dialog.
-

Converting grace notes to normal notes

PROCEDURE

1. Select the notes that you want to convert.
If you want to make sure that all notes in the score are normal notes, you can select all notes (using the Select All command on the Edit menu).
 2. Double-click on one of the selected grace notes.
The Set Note Info dialog appears.
 3. Select "Normal" from the "Type" pop-up menu.
 4. Click Apply.
-

Tuplets

The regular Display Quantize values do not apply to any other divisions than triplets. To create quintuplets, septuplets, etc., follow the instructions below.

There are two methods for creating tuplets:

- With permanent alteration to the MIDI data. This is the "drawing" mode to use when you want to build the tuplet from scratch. It does not put any demand on the notes' positions before the tuplet is created.
- As display quantize. This is the method you use when the tuplet is recorded and plays back as you want it, but is not displayed correctly.

Actually, in the first case, you make permanent alterations and set display quantize settings, all in one go. In the second case you only make display quantize settings.

With permanent change to MIDI data

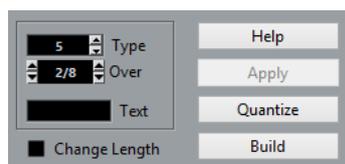
PROCEDURE

1. Insert as many notes as the tuplet consists of.
This would typically be 5, 7 or 9. If the tuplet contains rests, simply leave space for those, but make sure that the current Display Quantize value allows them to be shown.



Five sixteenth notes, about to be converted to a quintuplet.

2. Select all the notes that make up the tuplet.
3. Select "Build N-Tuplet..." from the Scores menu.
The Tuplets dialog appears.



4. Set the type of tuplet in the Type field.
"5" means a quintuplet, "7" means a septuplet, etc.
5. Set the length of the entire tuplet using the "Over" field.
6. Activate Change Length, if needed.
If you do, the program alters the length of all notes so that they are exactly the note value the tuplet indicates. If you do not, the lengths of the existing notes is not affected in any way.
7. If you want any other text than the standard above the tuplet, enter it into the "Text" field.
The standard text is simply the number in the type field. If the tuplet is put under a beam the text is put just above it. If there is no beam, the text is found in the middle of a bracket.
8. Click Build.
The tuplet appears. The notes have now been moved to the tuplet positions and their length might have changed.



9. If needed, edit the lengths and pitches of the notes in the tuplet.
You can also make various settings for the appearance of the tuplet – see below.

RELATED LINKS

[Tuplet display options](#) on page 1123

Without permanent change to MIDI data

PROCEDURE

1. Select the notes in the tuplet group.
In this case, the notes play back correctly but are not displayed as a tuplet (yet).
2. Select "Build N-Tuplet..." from the Scores menu to bring up the Tuplets dialog.
3. Make settings in the dialog, as described above.
4. Click Quantize.
Now the tuplet is displayed correctly. You can make additional settings for how the tuplet should appear, as described below.

5. If necessary, adjust the notes.

IMPORTANT

Lengths and positions in a tuplet group are probably best edited using the info line.

Editing tuplet settings

PROCEDURE

1. Double-click on the text above the Tuplet group to bring up the Tuplets dialog.



2. Adjust the Text setting.
 3. Click Apply.
The changes are applied to the tuplet, without affecting the tuplet type or length.
-

Grouping

If the Tuplet is a quarter note long or shorter, the notes are automatically grouped under a beam. If it is longer you have to perform the grouping manually.

RELATED LINKS

[Grouping](#) on page 1110

Tuplet display options

In the Score Settings dialog, on the Project–Notation Style subpage (Tuplets category), you can find the following settings for tuplets:

Tuplet Brackets

There are three possible settings for this option:

- None: Tuplets never have brackets.
- Always: Tuplets always have brackets.
- ...by the head: Brackets are shown only when the tuplets are displayed on the “head side”.

Display Tuplet values by the Beams

If this option is activated, tuplets are displayed on the “beam side” of the notes instead of on the note head side.

Suppress Recurring Tuplets

If this option is activated, and you have several tuplets of the same type in the same bar, only the first of these is displayed as a tuplet.

Show Tuplet Brackets as “Slurs”

If this option is activated, the tuplet brackets are “slur-like” (rounded).

Working with symbols

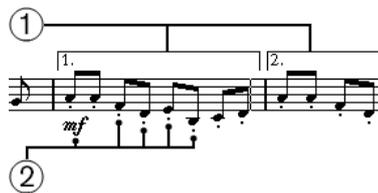
About this chapter

In this chapter you will learn:

- What the different types of symbols are.
- How to insert and edit symbols.
- Details about special symbols.

Background: The different layers

A score page is always made up of three layers – the note layer, the layout layer and the project layer. When you add symbols, these are inserted into one of these layers, depending on the type of symbol. The symbols that have a relation to notes – accents, dynamic markings, slurs, lyrics, etc. – are put in the note layer. Other symbols, such as some types of text, can be inserted either on the layout layer (which is individual for each layout) or on the project layer (common for all layouts). You can change the layer type by right-clicking the symbol and selecting the layer type from the context menu.



1. Layout layer symbols
2. Note layer symbols

Note layer symbols

Let's look at the note layer symbols first.

- Note symbols. These are each tied to a single note. Examples of note symbols are accents and lyrics. When you move the note, the symbol moves with it. The same is true if you cut the note and then paste; the symbol is cut and pasted together with the note.
- Note-dependent symbols. Only a few symbols belong to this category, for example the arpeggio lines. In one way, these behave just like grace notes. They always precede a note or chord. If there is no note "after them" on a staff, they disappear.
- All other note layer symbols (tempo, dynamics, chords, etc.). Their position is related to the bar. Whichever way you edit the notes, these symbols remain unaffected. However, their positions are fixed within a measure. If you for example change the spacing of the bars across the page, this affects the symbols positions.

RELATED LINKS

[Setting the number of bars across the page](#) on page 1193

[Grace notes](#) on page 1120

Layout layer symbols

Now let's examine the layout layer symbols. The layout layer is not stored individually for each track, as the other symbols are. Instead it is common to a "set of tracks". Let's illustrate this with an example:

You have four tracks that make up a string quartet. You edit them all at the same time and add symbols to the score, both note layer symbols and layout layer symbols.

Now you close the Score Editor and open only one of the tracks for editing. All your note layer symbols are there just as you left them, but the layout layer symbols have disappeared! Don't worry, close the editor again, and open all four tracks for editing and the symbols are back.

This is due to the fact that the layout layer symbols are part of a "bigger entity" called "layout". And a layout is something that is stored not per track, but for a group of tracks. Each time you open the same combination of tracks for editing, you get the same layout.

RELATED LINKS

[Working with layouts](#) on page 1176

Project layer symbols

Project layer symbols are layout symbols that are present in all layouts.

Using project layer symbols in conjunction with the Arranger mode, you can have playback in the program follow the score – repeats, Da Capos, and endings are played back properly allowing you to hear your compositions as they would be played back by live players.

Why three layers?

There are several reasons for this division into layers:

- Many of the symbols that are in the layout layer can be stretched to span over several staves, or for other reasons make more sense to think of as belonging to a certain group of tracks.
- The layout layer is only one part of the bigger concept of layouts. Layouts allow you to easily extract parts from a full score and perform automatic formatting.
- Typically, you want to display some symbols – repeat bar lines, endings, score titles, etc. – for all layouts in a score. To achieve this, insert them on the project layer.

RELATED LINKS

[Working with layouts](#) on page 1176

[The available symbols](#) on page 1127

The Symbols Inspector

To display the Symbols Inspector, click the "Set up Window Layout" button on the toolbar and activate the Symbols option.

Customizing the Symbols Inspector

You can customize the appearance of the Symbols Inspector by showing/hiding sections and by specifying their order in the Inspector.

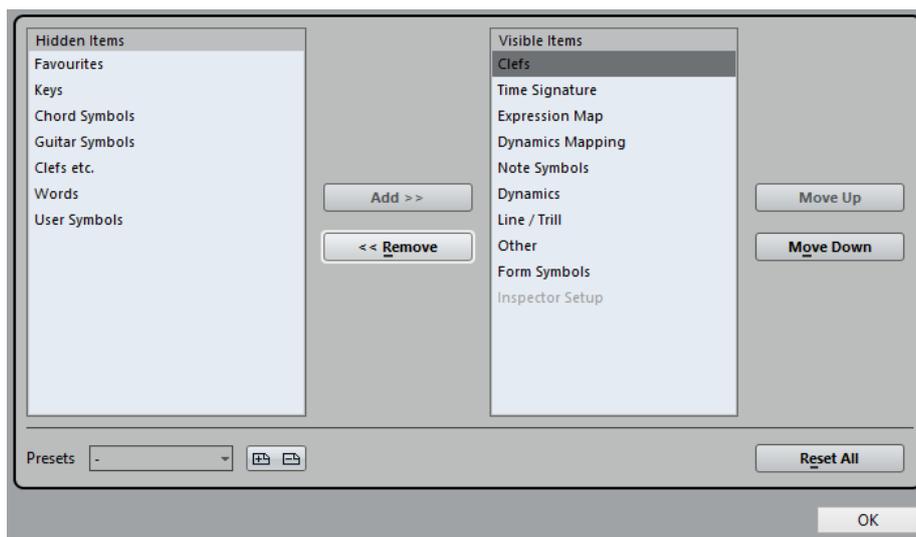
Showing/Hiding Symbols Inspector Sections

If you right-click any Inspector section, a context menu appears. On this menu, you can directly check (show) or uncheck (hide) elements of the Inspector as desired.

You can also select different preset configurations from the lower half of the menu. To display all Symbols Inspector sections, select "Show All".

The Symbols Inspector Setup dialog

If you right-click any closed section in the Symbols Inspector and select "Setup..." from the context menu, a dialog appears. In this dialog you can configure where the separate sections are placed in the Inspector and save/recall different configurations of the Inspector.



The dialog is divided into two columns. The left column displays the visible sections in the Inspector, and the right column displays the hidden sections.

- You can change the current show/hide status by selecting items in one column and using the arrow buttons in the middle of the dialog to move them to the other column. The changes are reflected directly in the editor.
- You can change the order of the (visible) section in the Symbols Inspector with the "Move Up" and "Move Down" buttons.

The changes are reflected directly in the Score Editor.



A customized Symbols Inspector

- If you click the Save button (disk icon) in the Presets section, you can name the current configuration and save it as a preset.
- To remove a preset, select it and click the trash icon.
- Saved configurations are available for selection from the Presets pop-up menu in the dialog or directly from the Inspector context menu.
- To revert back to the default Inspector settings, right-click any of the section and select “Default” from the context menu.

Working with symbol palettes

You can open any of the Symbols Inspector sections as separate symbol palettes.

Opening sections as palettes

PROCEDURE

1. In the Symbols Inspector, open the desired symbols section.
2. Right-click on any of the symbols in the section.
Note that you have to right-click on a symbol. Right-clicking a section header opens a different context menu instead.
3. Select “Open As Palette” from the context menu.



The selected section is shown as palette.

Moving and handling palettes

Palettes are handled as any window, which means that you can:

- Move a palette to another position by dragging its title bar.
- Close a palette by clicking its close button.

In addition, you can select whether the palette is shown horizontally or vertically, by right-clicking and selecting “Toggle” from the context menu.

The available symbols

The following symbols palettes/tabs are available:

- Quick Staff Setup
- Favourites
- Keys
- Clefs
- Time Signature
- Chord Symbols
- Guitar Symbols
- Cubase Pro only: Expression Map
- Dynamics Mapping
- Clefs etc.
- Note Symbols

- Dynamics
- Line/Trill. Note that the arpeggios, hand indication and strum symbols are all “note-dependent”!
- Other
- Form Symbols. These symbols can be selected for the note layer, the layout layer, and the project layer.
- Words
- User Symbols

When you place the mouse pointer on a symbol, a tooltip shows you information about the function.

RELATED LINKS

[Expression maps \(Cubase Pro only\)](#) on page 760

[Working with mapped dynamics](#) on page 1217

[The Words Section](#) on page 1171

[User Symbols](#) on page 1153

[Symbol details](#) on page 1147

Setting up the Favourites Section

In the Symbols Inspector, you can find a section called Favourites. Cubase allows you to fill this section with a selection of symbols from other sections. This way, you have instant access to the symbols you use often:

PROCEDURE

1. Open the Favourites section.
If it is the first time you are using this section, it is empty.
2. Open the section from which you want to copy a symbol.

NOTE

Not all symbols can be added to the Favourites section.

3. Right-click on the symbol that you want to add to the Favourites section and select “Add to Favourites” on the context menu.
You can also add a symbol to the Favourites section by **Alt**-clicking on it.
 4. Repeat this procedure for other symbols that you want to add to the Favourites section.
To remove a symbol from the Favourites section, select “Remove from Favourites” from the context menu or hold down **Alt** and click on it.
-

Important! – Symbols, staves, and voices

Most symbols belong to a staff when inserted. Only note symbols, slurs and ties are an exception. They belong to notes and therefore to voices.

It is extremely important that the correct staff is active when you insert a symbol (if you are editing multiple staves).

If you for example insert a symbol while the wrong staff is active, the symbol might later “disappear” because you edit another configuration of tracks (the track you actually inserted the symbol on might not be opened for editing).

The same is true for note symbols and their relation to voices. Make sure that the correct voice is active when inserting symbols or they might wind up at the wrong position, fermatas may be turned upside down, etc.

Layout symbols work slightly differently. Instead of belonging to a certain staff or voice, they belong to a layout. Since different track combinations use different layouts, this means that if you insert a layout symbol in the score when you are editing two tracks (for example a trumpet and a saxophone part), it is not there when you view each track by itself in the Score Editor. If you want the same symbols to appear in other layouts as well, you can copy the form of one layout to another. If you want a symbol to appear in all layouts, use the Project layer.

Adding symbols to the score

Making space and handling margins

- If you find there is not enough space between staves to add symbols (like for example text), you can separate the staves.
- If you find the score looks cramped after adding symbols, you can use the options in the Auto Layout dialog.

IMPORTANT

Symbols you add outside the margins are not printed!

RELATED LINKS

[Dragging staves](#) on page 1195

[Auto Layout](#) on page 1199

About the Draw tool

Unlike the other MIDI editors, the Score Editor toolbar does not contain a Draw tool. Instead, the Draw tool is “automatically” selected when you insert symbols. The following applies:

- Normally, the Draw tool is automatically selected when you click on a symbol in the Inspector. However, if the “Double-Click Symbol to get Draw Tool” option is activated in the Preferences dialog (Scores–Editing page), you need to double-click the symbol to get the Draw tool.
- On the same page of the Preferences dialog, you can find an option called “Display Object Selection tool after Inserting Symbol”. If this option is activated, the Object Selection tool is automatically selected after you have inserted a symbol.

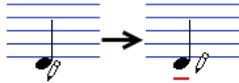
If you want to insert a lot of symbols with the Draw tool, you may want to deactivate this option.

Adding note symbols

Adding a symbol to one note

PROCEDURE

1. In the Symbols Inspector, open the Note Symbols section.
2. Click (or double-click) on the desired symbol in the section.
As mentioned above, the “Double-Click Symbol to get Draw Tool” preference determines whether you need to double-click. In either case, the Draw tool is selected.
3. Either click on the note or above or below it.
If you click on the note, the symbol is put in at a predefined distance from the note. If you instead click “above or below” the note, you decide for a vertical position yourself. In either case, the symbol is aligned horizontally with the note. It can later be moved up/down.



Clicking on a note inserts the note symbol (in this case a tenuto) at a predefined distance from the note head.

There are three options in the Accents category of the Score Settings dialog (Project page-Notation Style subpage) that affect the vertical positioning of note symbols:

- **Accents above Stems**
If this option is activated, accent note symbols are displayed at the stem side of notes instead of the note head.
 - **Accents above Staves**
If this option is activated, accent note symbols are displayed above the staff, regardless of the stem direction of the notes. This setting overrides the “Accents above Stems” option.
 - **Center Note-Linked Symbols on Stems**
If this option is activated, accents are centered on stems and not on note heads.
-

Adding a symbol to several notes using the Draw tool

You might for example want to add a staccato symbol to all notes within a few measures.

PROCEDURE

1. In the Symbols Inspector, open the Note Symbols section.
2. Select the notes to which you want to apply the symbol.
3. In the Symbols Inspector, click on the desired symbol.
4. Click on one of the notes.



The symbol is added to each selected note, at a predefined distance. The symbols can be moved later.

Adding a symbol without tying it to a note

Note-dependent symbols can be entered freely, too. This allows you to add a fermata to a rest symbol for example.

PROCEDURE

1. Make sure that the correct staff is active.
 2. Click the symbol so that the Draw tool is selected, as described above.
 3. Hold down **Ctrl/Cmd** and click where you want to add the symbol.
-

Adding other symbols

PROCEDURE

1. In the Symbols Inspector, open the desired symbol section.
2. Click the symbol that you want to add.
3. Click once or click and drag somewhere in the score.

The symbol appears. For many symbols with a length, you can drag to set the length of the symbol directly. The symbol appears with its handles selected (if it uses handles) so that you can change its size directly.



Press the mouse button – drag – and release!

You can change the size of most of the note symbols and dynamics in a score by right-click on the corresponding object and selecting the desired option from the Size submenu on the context menu.

RELATED LINKS

[Changing length, size, and shape](#) on page 1144

About note-dependent symbols

Note-dependent symbols like arpeggios and strum directions must be put in front of a note or they belong to the following note instead (if there is no following note, the symbols are not inserted at all).

Adding text

There are special methods for working with text.

RELATED LINKS

[Working with text](#) on page 1161

Adding slurs and ties

Slurs can be drawn in manually or inserted automatically for a group of notes. Ties are usually added by the program but can also be drawn in as “graphic” symbols.

NOTE

There are two types of slurs – “regular” slurs and Bezier slurs (with which you have full control over thickness, curve shape, etc.).

Slurs, ties, and the Display Quantize value

Since a slur or tie “musically” always spans from one note (or chord) to another, the beginning and end of a slur/tie in Cubase is always related to two notes in the score.

When you draw in a tie or slur, the program uses the Quantize value to find the closest two notes to “attach” the symbol to. In other words, if you want to add the slur/tie to a note at a sixteenth note position, make sure Quantize is set to 1/16th notes or smaller (this is only true for manual drawing in of slurs and ties).

Please note that this does not necessarily mean that the symbol has to start or end exactly above/below two notes. Instead, what it means is that when you use the Layout tool to move the note graphically to adjust the look of the bar, the slur/tie moves with it. The same is true if you adjust the width of the measure – the slur/tie is adjusted accordingly.

NOTE

If you want the end points of the slurs to snap to exact note positions, activate the “Snap Slurs when dragging” option on the context menu or in the Preferences dialog (Scores–Editing page).

RELATED LINKS

[Graphic moving of notes](#) on page 1118

Drawing the slur/tie

PROCEDURE

1. Set the Quantize value depending on the positions of the two notes that the slur/tie should span.
For example, if one of them is at a quarter note position and the other at an eighth note position, set Quantize to 1/8 note or a smaller note value.
 2. Click on the correct slur/tie in the Symbols Inspector, so that the Draw tool is selected.
 3. Position the mouse close to the first note and drag to a position close to the second note.
The end points of the slur/tie snap to their default positions – holding down **Ctrl/Cmd** allows you to move the end points freely.
There are two special functions for inserting a slur or tie that automatically spans from one note to another.
-

Adding a slur/tie between two notes

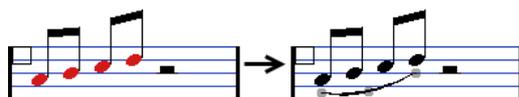
PROCEDURE

1. Select two notes.
 2. Click the correct slur/tie symbol in the Inspector, so that the Draw tool is selected.
 3. Hold down **Ctrl/Cmd** and **Shift** and click on one of the two notes.
The slur/tie is added between the two selected notes.
-

Inserting a slur over a selection of notes

PROCEDURE

1. Select a span of notes.
2. Open the Scores menu and select “Insert Slur”.



A slur is created, starting at the first selected note and ending at the last.

The Bezier slur



The Bezier slur is a special slur symbol, found in the Dynamics symbol section. Unlike the regular slur, this symbol is made up of a bezier curve, allowing you to create more advanced curve shapes.

To add a Bezier slur, click the symbol in the Inspector so that the Draw tool is selected, and click or drag in the score. Clicking creates a Bezier slur of the default length and shape, while dragging creates a straight line.

The default Bezier slur has four curve points – one at each end and two along the curve.



- To move the slur, click on it (but not on a curve point) and drag.
- To resize the slur, click and drag the end points.
- To change the shape of the slur, click on one of the middle curve points and drag in any direction.

Right-clicking on a curve point brings up a context menu with the following options:

Add Points/Reduce Points

Adds another pair of curve points to the Bezier slur. This allows you to create very complex slur shapes. After adding points, there is an additional menu item “Reduce Points” – selecting it removes the additional curve points.

Add Thickness

Makes the Bezier slur thicker.

Reduce Thickness

Makes the Bezier slur thinner.

Hide

This hides the slur symbol.

RELATED LINKS

[Hiding/showing objects](#) on page 1188

Creating trills

If you have recorded or entered a trill, Cubase can help you display this properly:

PROCEDURE

1. Select the notes that make up the trill.
2. Right-click on one of the notes and select “Build Trill...” from the context menu.
3. Select an option from the dialog that appears.
The radio buttons determine how the trill should look. Activate the “Help Note” option if you want an extra note to indicate between which notes the trill should be played.
4. Click OK.

RESULT

- All notes except the first one (and possibly the second) are hidden.
- The first note automatically gets a display length matching the length of the whole trill.
- If you choose to include a help note, the second note is converted to a “Graphic” note, with brackets but without stem. Otherwise, the second note is hidden, too.
- The trill symbols you selected in the dialog are inserted.



Inserting symbols across staves

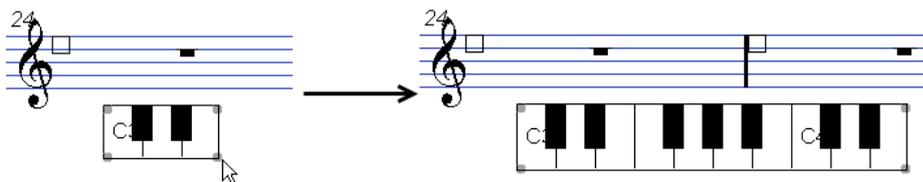
If you hold down **Alt** while adding a symbol to one staff in a grand staff, this symbol is put in at corresponding positions on all staves. This allows you for example to insert rehearsal marks, repeats, etc. for all instruments at the same time.

Adding a keyboard symbol

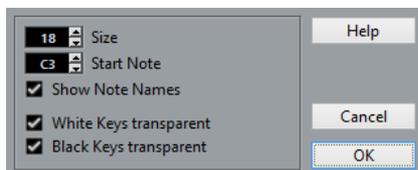


The Other section contains a piano keyboard symbol, useful in educational scores, for example. The symbol has the following properties:

- To insert the keyboard symbol, select it from the Inspector, click with the Draw tool at the desired position and drag a box to specify the approximate size of the keyboard.
- After you have inserted the keyboard symbol, you can drag its edges to resize it vertically or horizontally.



- If you right-click on an inserted keyboard symbol and select "Properties" from the context menu, a dialog opens allowing you to specify further properties for the symbol. You can also double-click on an inserted keyboard symbol to open this dialog.



Size

Governs the width of the keys.

Start Note

This is the leftmost note in the keyboard symbol.

Show Note Names

If this option is activated, each C key is displayed with note name and octave (C1, C2, etc.).

White/Black Keys transparent

Activate these if you want the white and/or black keys to be transparent.

Adding guitar chord symbols

A fretboard symbol of a guitar chord can be inserted anywhere in the score.

Guitar symbols are found in the “Guitar Symbols” section and the Other section in the Symbols Inspector.

- The Guitar Symbols section contains all Guitar symbols of the current guitar library. If the symbol that you want to insert is among these, select it and insert it as you would any other symbol, see above.

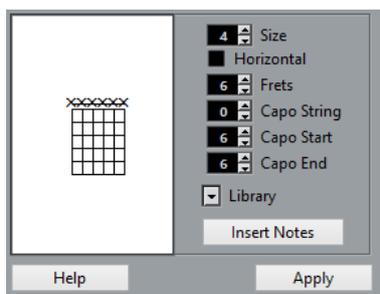
To insert a guitar symbol not present in the guitar library, proceed as follows:

PROCEDURE

1. Open the other section.
2. Click on the guitar chord symbol, so that the Draw tool is selected.



3. Click in the score, at the position where you want the symbol to appear. The Guitar Symbol dialog appears.



- To put a dot on any fret and string, click on it. To remove it, click again.
 - To add a symbol just above the string, outside the fretboard, click there. Consecutive clicks allow you to select between a ring (open string), a cross (do not play this string) and no symbol.
 - To add a capodaster number, click to the left of the symbol. Consecutive clicks allow you to step through the possibilities.
 - You can also add a capodaster symbol (a line over the strings), by setting the “Capo String” parameter to a value higher than 0. By adjusting the Capo End and Start values, you can create capodaster symbols that span fewer strings.
 - Use the “Size” value field to adjust the size of the chord symbol.
 - If you want the symbol to be horizontal, activate the “Horizontal” checkbox.
 - To display more or fewer frets than the default six, change the “Frets” value.
4. Click Apply. The guitar symbol appears in the score.
 - Clicking the Insert Notes button inserts the actual notes in the chord into the score. You can also right-click on a guitar symbol and select “Insert Notes” from the context menu.

You can edit the symbol at any time by double-clicking it, changing the settings in the dialog and clicking Apply. Note that you can also access the symbols that you defined in the guitar library by right-clicking a guitar symbol – see below.

NOTE

If you select “Make Chord Symbol” from the context menu, the corresponding chord symbol is displayed above the guitar symbol. This function is very useful when writing lead sheets, for example.

RELATED LINKS

[Using the guitar library](#) on page 1136

Using the guitar library

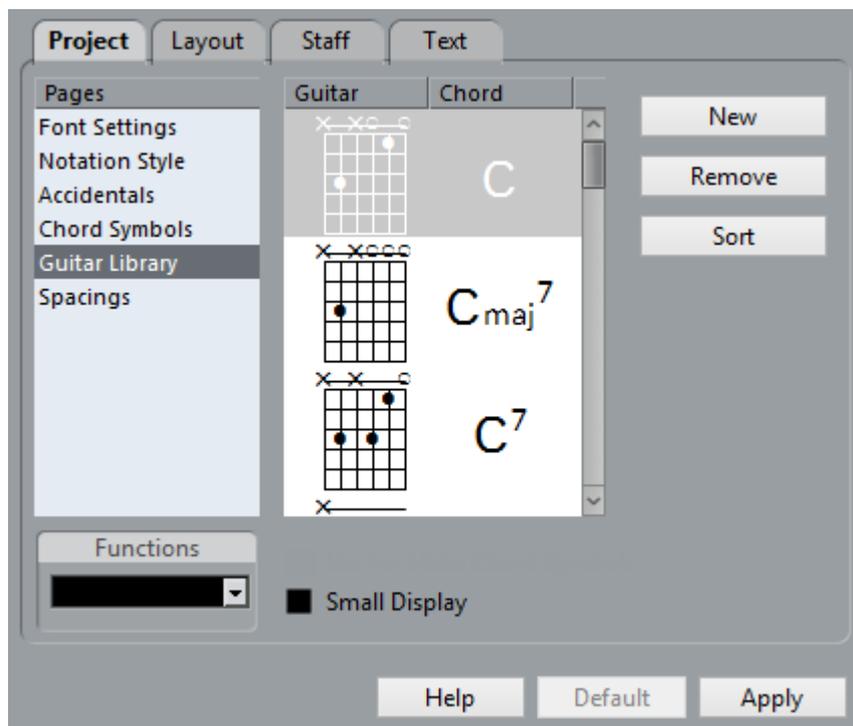
The above method is fine if you only want to add a few chord symbols to your score. If you need a lot of chord symbols, or if you are using chord symbols in a lot of different scores, you can gather all your chord symbols in a “guitar library” instead. This way you do not have to recreate the same chord symbol over and over again.

Defining chord symbols

PROCEDURE

1. In the Symbols Inspector, double-click on one of the symbols in the Guitar Symbols section to open the guitar library.

Alternatively, you can open the Score Settings dialog on the Project page and select the “Guitar Library” subpage.



2. To add a guitar chord symbol to the library, click the New button. A chord symbol appears in the list to the left.
3. To edit the chord symbol, double-click it in the list. This opens the Guitar Symbol dialog, as when editing a chord symbol in the score.

- The symbol you create is also “interpreted” and its name is displayed to the right of the fretboard symbol.
This can also be edited by double-clicking if you like.
- To sort the available symbols in the library according to their root notes, click the Sort button.
- To remove a symbol from the library, select it in the list and click Remove.
- To save the current library as a separate file, select “Save...” from the Functions pop-up menu.
A file dialog appears, allowing you to specify a name and location for the file.
- To load a guitar library file, select “Load Current Pane...” from the Functions pop-up menu.
In the file dialog that appears, locate and open the desired guitar library file.

IMPORTANT

Loading a guitar library file replaces the current library!

RELATED LINKS

[Using Make Chord Symbols](#) on page 1158

Inserting symbols from the library

To insert symbols from the guitar library into the score, proceed as follows:

- Right-click on a guitar symbol in the score and select a chord symbol from the Presets submenu on the context menu.

Adding an image file

You can insert image files as symbols into the Score. This allows you to import logos, copyright symbols, images of finger positions, etc.

PROCEDURE

1. In the Symbols Inspector, open the Other section.
Image files can be inserted on all three layers.



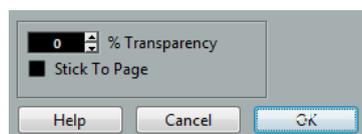
2. Click the Image File button to select the Draw tool. Click in the score at the position where you want to insert the file.
A file dialog opens.
3. Locate and select the image file you want to insert.
The lower section of the Import dialog contains the following settings:
 - To copy the referenced file into the Project folder, activate the “Copy to Project folder” option.
This is recommended as it makes it easier to manage all files used in a project.

- If you modify your score, by adding staves for example, the position of an inserted image file changes. If this is not what you want, activate “Stick to Page” to keep it at a fixed position in your staff.
 - The Transparency parameter allows you to set the desired transparency of the image.
4. Click Open to insert the file.
-

RESULT

The image file is inserted. Its size depends on the printer resolution. However, you can scale the image by dragging its handles. To restore the printer resolution, right-click on the image to open the context menu and select “Snap to Printer Resolution”.

You can modify the settings you made on import by right-clicking the image and selecting “Properties” on the context menu, to open the Image Properties dialog.

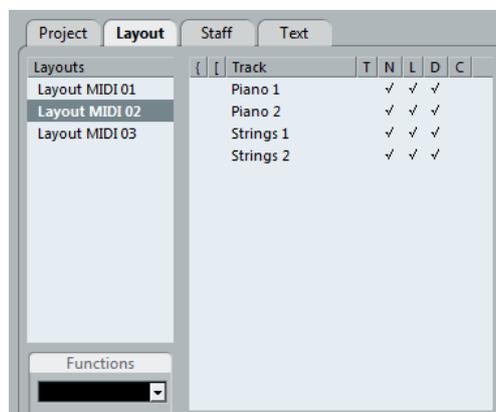


RELATED LINKS

[Background: The different layers](#) on page 1124

Using layout symbols

Layout symbols and texts are inserted on the layout layer. When you are editing a layout containing several tracks, you can have inserted layout symbols and texts automatically copied to any combination of tracks in the layout. You decide which staves should display layout symbols and texts by ticking their “L” column in the Score Settings dialog, on the Layout page.



- Any editing you perform to layout symbols and texts is automatically duplicated in the other tracks.
- The display of layout symbols and texts for different tracks can be deactivated at any time.
- Layout symbols and texts can be copied between layouts, by using the Get Form function on the Functions pop-up menu on the Layout page of the Score Settings dialog.

One example of how to use layout symbols and texts:

Let's say you are editing a full orchestra score, and want rehearsal marks inserted for more than one staff (typically, above each instrument group – brass, strings, percussion, etc.). Now all you need to do is insert the rehearsal marks for one of the tracks. To do so, open the Score Settings dialog on the Layout page, tick the “L” column for the desired tracks/staves, and click Apply.

Using Project symbols

Project symbols are part of the project layer and therefore appear in all layouts. The project layer also contains changes to bar lines (e. g. repeats and double bar lines) and bar number offsets. Typically you use Project symbols when you know you want these shown for all combinations of tracks.

NOTE

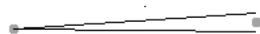
You can also use Project symbols in combination with the Arranger mode to have the program play back according to the score, e. g. repeats, Da Capos and endings.

RELATED LINKS

[Scores and the Arranger mode](#) on page 1217

Selecting symbols

Almost all symbols can be selected by clicking on them. For symbols that have a length or size, one or more handles appear.



A selected crescendo

An exception to this are the slurs and ties which can be selected by clicking on the end points or by drawing a selection rectangle.

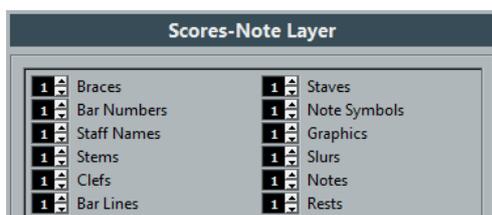
Using the lock layers

Sometimes it can be very hard to click on a symbol or other object in the score without accidentally selecting other symbols nearby. To remedy this, you can assign different types of objects to different “lock layers” (up to three) and instruct Cubase to “lock” one or two of these layers, making them “unmovable”. Furthermore, you can lock the layout and project layers separately if needed.

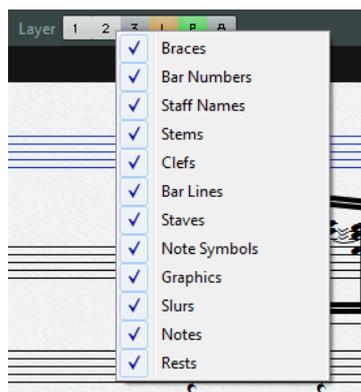
Setting up the lock layers

PROCEDURE

1. Open the Preferences dialog and select the Scores–Note Layer page.



2. Assign each event type to a layer (1, 2, or 3).
It is a good idea to specify different layers for event types that might conflict “graphically”. For example, you might want to assign bar numbers and note symbols to different layers if you find that you accidentally move bar numbers when editing note symbols and vice versa.
3. Click OK to close the dialog.
Alternatively, you can right-click on one of the Layer buttons (1-2-3) on the extended toolbar to bring up a pop-up menu, showing which object types are associated with that layer.



A checkmark for an object type means it belongs to that layer. If no checkmark is shown, you can select the object type from the pop-up menu to move it to that layer.

Locking a layer

To “lock” a layer, click on its lock layer button.



In this figure, layer 2 is locked. Event types assigned to layer 2 cannot be selected, moved, or deleted.

Visual indication of the layers

Objects belonging to locked note layers are “grayed out” in the score. This makes it very easy to find out which object belongs to which layer – perhaps especially useful for the layout and project layers. For example, to quickly spot all objects in the layout layer, lock all other layers by clicking their buttons. Now, only layout layer objects are shown normally; all other objects are grayed out.

Moving and duplicating symbols

There are four ways to move and duplicate symbols:

- By dragging them with the mouse (see below).
- By using the computer keyboard (moving only).
- By using the bar handles.
- By using the Paste Attributes function (duplicating note symbols only).

RELATED LINKS

[Moving by using the computer keyboard](#) on page 1142

[Moving and duplicating with the bar handles](#) on page 1143

[Copying settings between notes](#) on page 1109

Moving and duplicating by using the mouse

This is done much as with other objects in Cubase. The following rules apply:

- Note symbols and note-dependent symbols move with the notes/chords they belong to. In other words, if you move the note/chord, the symbols move with it/them.
- Note symbols (like accents and lyrics) can only be moved vertically. Other symbols (like braces and brackets) can only be moved horizontally.
- All other symbols without handles can be moved freely. If you hold down **Ctrl/Cmd**, movement is restricted to one direction only.

- If the symbol has one or more handles when it is selected, do not drag it by the handles, or you change its shape instead of moving it.
- Slurs and ties are an exception, as they can only be moved by first dragging one handle and then the other. However, if you use the Layout tool to move the notes they belong to, or if you change the measure width, they are adjusted automatically.
- Duplicating is done by moving with **Alt** pressed, as always in Cubase. Slurs, ties, and bar lines cannot be duplicated with this method.

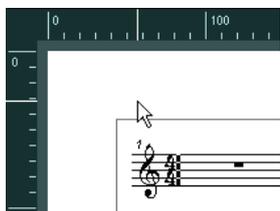
There are two features to help you position symbols (and other score objects) correctly: the rulers and the Position Info window.

RELATED LINKS

[Graphic moving of notes](#) on page 1118

The rulers

Unlike other editors, the Score Editor does not have a meter/time position-based ruler. Instead, its rulers are “graphical”, i. e. they indicate the actual x-y position of objects (with “zero” at the upper left corner).



- The current pointer position is indicated by thin lines in the rulers.
- To hide the rulers, right-click on a ruler and select “Off”.
This pop-up menu can also be found above the scrollbar at the far right.
- To display the ruler again, open the pop-up menu above the scrollbar at the far right and select one of the units (inches, centimeters, or points).
This setting also affects the units used in the Position Info window (see below).

The Position Info window

If you need to fine-tune the graphical positions of symbols and other objects, you should use the Position Info window. This makes positioning easier in two ways:

- You get a numerical indication of the exact position of the mouse pointer (and any object you are dragging).
- You can move objects or staves by typing in position values.

You display the Position Info window by clicking in the ruler.

Measure in CM	Rel.Pos	Sel.Staff: 0cm
X:3.4cm	dX:----	To Prev.Staff:----
Y:-1.29cm	dY:----	To Next.Staff:----

The window contains the following settings and values:

Measure in

Click this label to change units for the Position Info window. You can toggle between Inch, cm, and pt. This choice also affects the units used in the rulers.

Abs. Pos./Rel. Pos

Click this label to select whether X-Y position values are “absolute” (referring to the upper left corner of the current page) or “relative” (referring to the upper left corner of the active staff).

X, Y

When a single object is selected, these values show the horizontal and vertical position of this object.

When no objects or several objects are selected, these values show the current horizontal and vertical position of the pointer.

When a single object is selected, you can click on these values and type in a new position for the object.

dX, dY

When you are moving an object, these values indicate the horizontal and vertical distance you have moved it.

You can click and type in values to move the object(s) by the specified distances.

Sel. Staff

If "Abs. Pos" is selected (see above), this value shows the distance from the top of the score page to the top of the active staff.

You can click and type in a value to move the active staff. If "Rel. Pos" is selected, this value is always 0, since vertical positions are related to the top of the active staff!

To Prev Staff

The distance between the active staff and the staff above it. Clicking and typing in a value moves the active staff.

To Next Staff

The distance between the active staff and the staff below it. Clicking and typing in a value moves the staves below the active staff.

Dragging symbols across staves

If you drag a symbol across the staves, you can see how the "active staff" indicator to the left follows the mouse pointer. Use this as an indication to make sure that symbols end up in the correct staff.

- If you are editing several tracks at the same time, and want to make sure that a symbol is not accidentally moved to another track when you drag it vertically, activate the Lock "L" button on the extended toolbar.

If this option is activated, you cannot move symbols across staves by dragging.



Moving by using the computer keyboard

In the Key Commands dialog, you can assign key commands for moving symbols, notes, or rests graphically. The commands are found in the "Nudge" category and are called "Graphical Left", "Graphical Right", "Graphical Top", and "Graphical Bottom".

Selecting an object and using one of these commands is the same as dragging them with the Layout tool, but this method offers higher precision.

Moving and duplicating with the bar handles

This function allows you to move or copy the contents of a whole bar to one or several other bars. You can select which elements in the bar will be included in the operation.

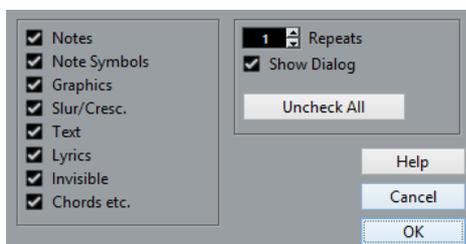
PROCEDURE

1. Make sure that the filter bar is visible.
If the filter bar is not visible, click the “Set up Window Layout” button on the toolbar and activate the Filters option.
2. On the filter bar, make sure that the “Bar Handles” option is activated.
Now, each bar in the score is shown with a handle in the upper left corner.



Bar handles

3. Double-click on the handle of the bar from which you want to copy or move symbols.
The Bar Copy dialog appears.



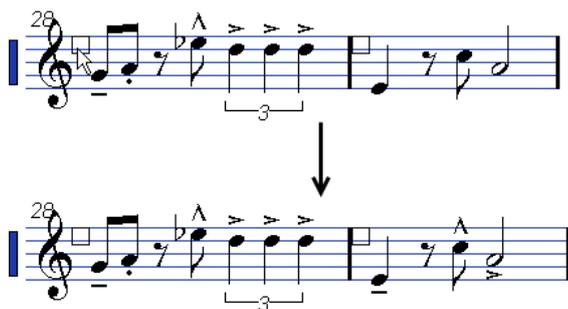
4. Make sure that only the symbol types that you want to move/copy are checked.
 5. If you have several subsequent bars to which you want to copy symbols, set the “Repeats” value to this number of bars.
If you only want to copy symbols from one bar to another, make sure that “Repeats” is set to 1. This option is only available for copying, not for moving.
 6. If you want this dialog to appear every time you perform the move/copy operation, activate “Show Dialog”.
 7. Click OK to close the dialog.
 8. To copy the specified event types to another bar, hold down **Alt**, click on the bar handle of the first bar and drag it to the “target” bar.
To move the event types instead of copying them, drag the bar handle without holding down **Alt**.
If you activated “Show Dialog”, the Bar Copy dialog appears, allowing you to confirm your settings.
Click OK to close the dialog and perform the operation.
-

RESULT

If you activated “Note Symbols”, the note symbols are copied from the “source” bar and pasted onto notes at the same positions in the “target” bar. If there is a note symbol for a certain note in the “source” bar, but no note at the corresponding position in the “target” bar, the symbol is ignored.

The actual positions of notes are used as a basis for this operation – not the displayed positions.

If you copy the note symbols from the first bar to the second bar...



...only symbols that find corresponding note positions in the second bar are copied.

- If you activated other types of symbols, these are simply moved to the same graphical position in the “target” bar.
- If you set “Repeats” to a number larger than 1, the same symbols are pasted into that number of bars (starting from the one you drag the bar handle to).
- If you do not hold down **Alt** when dragging the bar handle, the symbols (and other event types specified in the dialog) are removed from the “source” bar.

IMPORTANT

If there already are symbols (or other objects) of the specified types in the “target” bars, these are removed.

Moving note symbols

Note symbols, slurs and ties all have “default positions”. This determines the vertical distance between the note head(s) and the symbol.

- You can manually adjust the vertical positions of individual symbols, but if you move or transpose their notes, the symbols are automatically reset to their default positions. This also ensures that note symbols and slurs are positioned sensibly when you change the Display Transpose settings.
- To reset the vertical positions of note symbols and slurs in a score, right-click on the corresponding object and select “Default position” from the context menu.

Changing length, size, and shape

You can change the shape of any symbol that has a length.

Changing the length of a symbol

PROCEDURE

1. Select the symbol.

The handles appear.



Symbols with a length have two handles when selected.

2. Drag one of the handles.

You may be restricted to vertically or horizontally only, depending on the type of symbol.

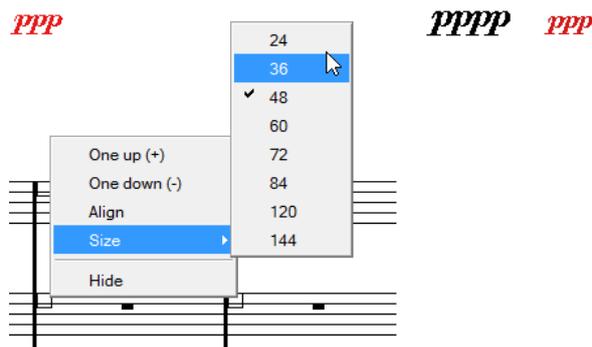
IMPORTANT

In the Preferences dialog (Scores–Editing page), there is a preference called “Keep Crescendo Symbols Horizontal”. If this option is activated, crescendo and diminuendo symbols are never slanted.

Resizing note symbols and dynamics

PROCEDURE

1. Right-click on a dynamic or note symbol.
2. Select the desired option from the Size submenu.



The size of the symbol changes accordingly.

Altering the shape and direction of slurs and ties

This section describes how to alter the “regular” slur and tie symbols.

There are two types of slurs and ties in the Symbols Inspector. The up/down variation of each actually represent the same symbol but with different initial direction. You can perform the following editing to slurs and ties:

- By dragging the middle handle up/down and left/right you can change the shape of the curve.



- By selecting a slur or a tie and clicking the “Flip” symbol on the extended toolbar or by selecting “Flip Position” on the context menu, you can change the direction and positioning of the slur or tie.

Actually, there are three “modes” for a slur or tie. You step through these three modes by clicking the button.



- By dragging the end points of a slur or tie, you can change its shape without affecting its “relation” to the notes it belongs to.

In other words, the end point of the slur/tie keeps its relative distance to that note when the note is moved with the Layout tool or when the measure width is adjusted.

- By holding down **Ctrl/Cmd** and dragging the end points of a slur or tie, it can be detached from the notes it belonged to.

NOTE

To restore the default shape of a symbol, right-click on it and select “Default position” from the context menu.

- To change the default shape and spacing of slurs and ties, open the Score Settings dialog on the Project–Spacings subpage and edit the “Slur’s Start & End Distance from Note Head” and “Slur’s Middle Distance from Note Head” settings.
These settings are used for all new slurs and ties you create, as well as for all existing slurs for which you have not manually changed the shape.

RELATED LINKS

[The Bezier slur](#) on page 1132

[Moving note symbols](#) on page 1144

Deleting symbols

This is done as with all other objects in Cubase, either with the Erase tool or by selecting it and pressing **Delete** or **Backspace**.

Copy and paste

All symbols except those on the Layout and Project layers can be copied and pasted just as any other object in Cubase. The following applies:

- Symbols that were tied to notes (e. g. accents) become “free-floating” objects when pasted. That is, they are not tied to any note any more. If this is not what you want, consider copying with the bar handles.

RELATED LINKS

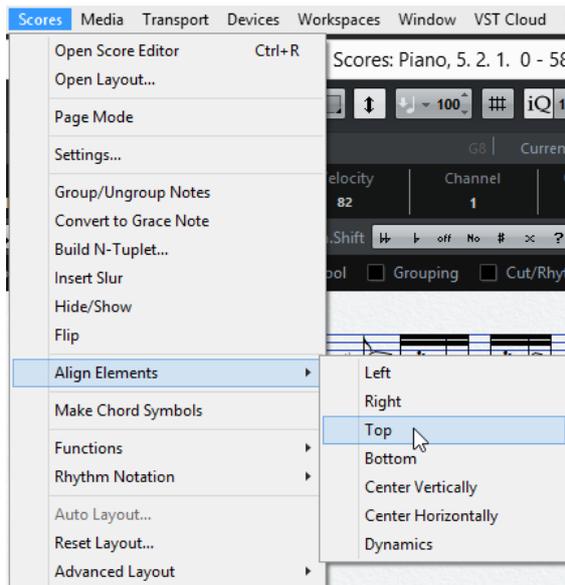
[Moving and duplicating with the bar handles](#) on page 1143

Alignment

Symbols can be aligned as in drawing programs.

PROCEDURE

1. Select all objects that you want to align.
2. Open the Scores menu and select an option from the Align Elements submenu.



IMPORTANT

Note symbols like staccato and accents can only be aligned horizontally.

The “Dynamics” option is a special function for aligning dynamic symbols.

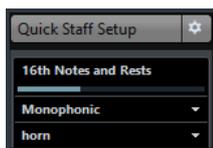
RELATED LINKS

[Aligning dynamics](#) on page 1149

Symbol details

This section further describes some of the symbol sections.

The Quick Staff Setup Section



This section combines the basic settings for Display Quantize, staff mode, as well as staff presets for quick access.

RELATED LINKS

[Display Quantize values](#) on page 1083

[Setting up the voices](#) on page 1091

[About the polyphonic presets](#) on page 1092

The “Clefs etc.” Section



Clefs

You can insert a clef symbol anywhere in the score. This has an effect on the notes, just as the first clef on the staff has. And just as with the first clef, the type is selected from the Edit Clef dialog that appears when you select the Clef symbol and click in the Score.

When you double-click on an existing clef, the Edit Clef dialog appears again, allowing you to change the type. When you right-click on a clef, you can change the type from the context menu.

Keys

Inserting a key change is similar to inserting a new clef (see above).

NOTE

In the dialog that appears when you insert a key change, you can also insert Display Transpose changes.

Time signatures

You can insert a time signature symbol at the beginning of any bar. Inserting a new time signature inserts a change on the signature track.

When you select the Time Signature symbol and click in the score, the Edit Time Signature dialog opens, allowing you to specify the time signature. When you double-click on an existing time signature symbol, the same dialog appears, allowing you to change the type. When you right-click on a time signature, you can change the type on the context menu.

- You can select a font and size for time signatures in the “Font Settings” subpage of the Score Settings dialog (Project page).
The default font for this is the included “Steinberg Notation” font.

RELATED LINKS

[Inserting and editing clefs, keys, or time signatures](#) on page 1077

[Setting clef, key, and time signature](#) on page 1043

[Editing the key](#) on page 1048

[Editing the time signature](#) on page 1044

The Dynamics Section

There are dynamic symbols ranging from *ffff* to *pppp*, plus “special” dynamic symbols such as *sforzando*, *fortepiano*, etc.

- By selecting a dynamic symbol and clicking the “+” and “-” buttons on the extended toolbar, you can quickly edit dynamics in the score.
Use this feature to step between *pppp*, *pp*, *p*, *mp*, *mf*, *f*, *ff*, *fff*, and *ffff*.
- You can also right-click on a symbol and select “One up” or “One down” on the context menu.
As above, these commands can be used to step between *pppp*, *pp*, *p*, *mp*, *mf*, *f*, *ff*, *fff*, and *ffff*.
- To change the size of a dynamic symbol, right-click on it and in the context menu, select an option from the Size submenu.
- In the Line/Trill section you can find a line symbol which allows you to create the following type of change in dynamics:

ppp ————— *ff*

Crescendo and diminuendo (decrescendo)

In the Dynamics section, there are three kinds of crescendo symbols: regular crescendo, regular diminuendo and a “double” crescendo (diminuendo–crescendo).

- To insert a crescendo (<) or diminuendo (>), select the corresponding symbol from the section and drag from left to right.



- If you draw a crescendo symbol from right to left, the result is a diminuendo symbol, and vice versa.
- To insert a crescendo-diminuendo (<>) symbol, select the double crescendo symbol in the section and drag from left to right.
- To insert a diminuendo-crescendo (><) symbol, select the double crescendo symbol in the section and drag from right to left.
- When you have inserted a crescendo or diminuendo symbol, you can move it and resize it by dragging its handles.
- The “dynamic crescendo/diminuendo” symbol (p < f) is special in that it actually affects the velocity of the notes as they are played back.
- If the “Keep Crescendo Symbols ‘Horizontal’” option is activated in the Preferences dialog (Scores–Editing page), crescendo/diminuendo symbols are never slanted when you draw them, but stay horizontal.
Also, this option prevents you from accidentally dragging an endpoint up or down when moving the symbol.
- It is also possible to “flip” crescendo symbols, by selecting the option in the context menu or by clicking the Flip button on the extended toolbar.

RELATED LINKS

[Working with mapped dynamics](#) on page 1217

Aligning dynamics

There is a special command for aligning dynamic symbols (including crescendos) horizontally. Unlike the regular align function, aligning dynamics takes the “baseline” of the dynamic letters into account, aligning them as text rather than as graphic symbols.

PROCEDURE

1. Select the dynamic symbols that you want to align, e. g. pp and a crescendo.
2. Right-click on a selected symbol and select the “Align” function on the context menu. This aligns all selected dynamics (except slurs and beziars) horizontally.
You can also align the dynamic objects by opening the Scores menu and selecting “Dynamics” from the Align Elements submenu.

RELATED LINKS

[Alignment](#) on page 1146

The Line/Trill Section

Octave Symbols



The octave symbols (8va and 15va) act as a “local display transpose” – they shift the display of the score one/two octaves down.

- By dragging the end of the dotted line, you can specify exactly which notes are affected by the octave symbol.
Only notes beneath the dotted line are display transposed.
- You can also right-click on the octave symbol and select the “Extend (+)” or “Reduce (-)” command to extend it to the next chord or to reduce it.

RELATED LINKS

[Transposing instruments](#) on page 1050

Tuplet group symbols



These are “graphical” tuplet group symbols, as opposed to the “real” tuplets.

- After inserting a tuplet group symbol, you can double-click on its number and enter any number from 2 to 32.
- In the Score Settings dialog (Project page–Notation Style subpage) you can specify globally how tuplets are displayed.
You can also select a font and size for the tuplet numbers in the Font Settings subpage.
- You can also right-click on the tuplet group symbol and select the “Extend (+)” or “Reduce (-)” command to extend it to the next chord or to reduce it.

Vertical symbols

The vertical symbols in the Line/Trill section are “note-dependent”. This means that they must be inserted in front of a note.

RELATED LINKS

[Note layer symbols](#) on page 1124

[Grace notes](#) on page 1120

The Other Section



RELATED LINKS

[Working with text](#) on page 1161

[Inserting chord symbols](#) on page 1157

Pedal down and up symbols



When you insert a Pedal down or up symbol, you also insert an actual MIDI event (damper pedal, control change 64) at that position. Similarly, inserting or recording a damper pedal event in another editor displays a pedal down/up symbol in the score.

- If the “Hide Pedal Markers” option is activated in the Score Settings dialog, Project–Notation Style subpage (Miscellaneous category), all pedal markers are hidden.

Use this if you have recorded a lot of damper pedal messages, but do not want these to show in the score (for example if you are writing for an instrument other than piano).

A pedal down/up symbol combination can be displayed as “Two Symbols”, “Ped.” + Bracket” or as “Bracket only”. Just right-click on the pedal symbol and choose an option from the context menu. You can also set this in the Score Settings dialog, on the Project-Notation Style subpage (Miscellaneous category).

Repeats



Repeat signs (one and two bars) have a special feature: if you hold down **Shift-Ctrl/Cmd** when entering them, notes in the bars they relate to are automatically hidden.

RELATED LINKS

[Hiding/showing objects](#) on page 1188

Box (rectangle) symbol



This is a “generic” box symbol, which may be useful for different purposes. If you double-click on a box, a dialog opens in which you can specify whether the box is transparent or not, and whether the border is visible. This dialog can also be opened by selecting “Properties” from the context menu.

The box symbol is available in the “Other” and “Layout” sections.

The keyboard symbol

The Other section contains a piano keyboard symbol, useful in educational scores, for example.

RELATED LINKS

[Adding a keyboard symbol](#) on page 1134

Additional symbols

If you click the “Other Symbol” button and then into the score, the “Select Symbol” dialog opens. Here you can choose note heads, accidentals and rests that work only as drawing elements, i. e. they do not insert any note data into the track. They do not affect MIDI playback! You can set the desired symbol font size directly in the Font Size field.



The Form Symbols Section

Rehearsal marks



The following types of rehearsal marks are available: numbers and letters.

When you place the first of these in the score, it is labeled 1 or A (depending on which you choose), the second is then automatically labeled 2 or B, the next 3 or C, etc. If you delete one, the labeling of the others is shifted automatically so that they always make up a complete series of numbers or letters.

- You can select a font and size for rehearsal marks in the Project Text section of the Project-Font Settings subpage in the Score Settings dialog.
Use the Frame option to add a box or an oval around the rehearsal mark.
- Rehearsal marks can be added automatically at the start position of each Marker in the project with the “Marker track to Form” function.

Da Capo and Dal Segno symbols



The “D.C.”, “D.S.”, and “Fine” symbols provide a quick way to insert some common play directions into the score. The symbols are text symbols – you can adjust which font is used on the Project page (Font Settings subpage) of the Score Settings dialog.

- To have these symbols actually affect playback, insert them on the Project layer and use the Arranger mode.

RELATED LINKS

[Settings for other fixed text elements](#) on page 1174

[Scores and the Arranger mode](#) on page 1217

Endings



There are two types of endings, closed (“1”) and open (“2”). Both can be stretched to any length or height by dragging the handles. You can also double-click or right-click the existing number and enter any text you like.

You can insert endings in all layers. Which one to choose depends on the score; while it is handy to insert endings once and for all as Project symbols, this does not allow you to make individual adjustments for the different parts.

- You can right-click an ending symbol and select the “Extend (+)” or “Reduce (-)” command to extend the symbol to the next chord or to reduce it.

Tempo Indicator symbol



This symbol allows you to insert the current tempo according to the tempo track. In other words, to make this symbol display a certain tempo, insert the value on the tempo track.

Normally this symbol shows the number of beats (quarter notes) per minute, but if you double-click or right-click it, you can select any note value. The number then changes accordingly.

Tempo change according to note values symbol



This symbol allows you to specify a tempo change as a change from one note value to another. The example above would mean “lower the tempo by a third”.

To change the note value for either symbol, double-click or right-click it and select the desired note value from the context menu.

User Symbols

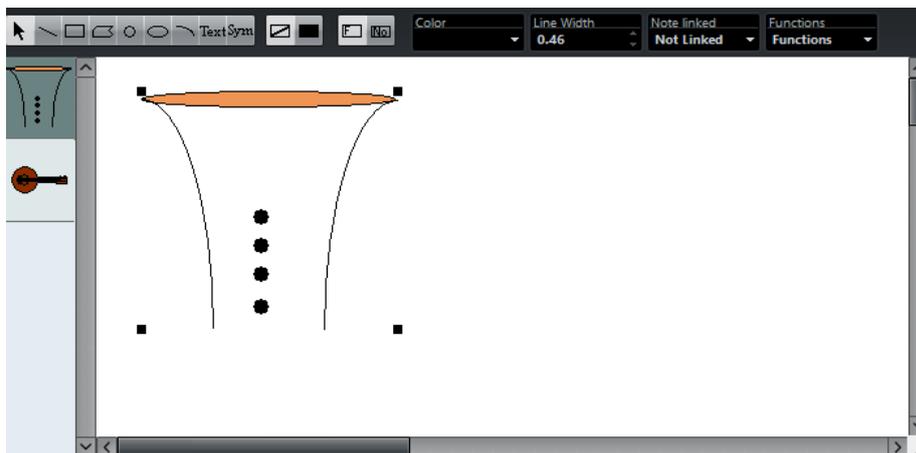
The User Symbols section lets you create your own graphic symbols and use these in the score.

Creating a user symbol

Initially, the User Symbols section is empty. To create symbols you use the User Symbols editor:

PROCEDURE

1. Double-click on the empty symbol field in the section.
The User Symbols editor opens. You can also right-click on an empty symbol field and select “Edit...” to open the same dialog.



2. Open the Functions pop-up menu and select the desired zoom factor from the View submenu.
Often you want to work at a reasonably high zoom factor when drawing and editing symbols.
3. Use the tools and functions to draw a symbol.
The available tools are listed in the table below.
When you are finished, you can close the editor and insert the symbol into the score, or you can create more symbols:
4. Select “New Symbol” from the Functions pop-up menu.
An empty symbol field appears in the section to the left of the drawing area – this section corresponds to the actual User Symbols section, showing all symbols that you have created.
5. Click the new empty symbol field on the left to make sure that it is selected.
The drawing area is cleared.
6. Continue creating new symbols this way.
 - You can edit existing symbols at any time by selecting them to the left and using the tools and functions.

- Any changes you make are automatically stored in the User Symbols section for the project. You can also export symbols for use in other projects, see below.
- To insert a user symbol into the score, click on it in the section and then click at the desired position in the score.
-

The User Symbols editor – tools and functions

The toolbar contains the following tools and settings, from left to right:

Object Selection

Use this to select objects – press **Shift** to select more than one. Click and drag to move objects – press **Ctrl/Cmd** to drag vertically or horizontally only or press **Alt** to copy.

To delete an object, select it and press **Backspace** or **Delete**.

Line

Draws a straight line.

Rectangle

Creates a rectangle. You can fill this with the Fill button if needed.

Polygon

Creates a polygon – click where each corner of the polygon should be and close the figure by clicking outside the drawing area.

Circle

Creates a circle. You can fill this with the Fill button if needed.

Ellipse

Creates an ellipse. You can fill this with the Fill button if needed.

Arc

Creates an arc.

Text

Allows you to insert text objects. Clicking with this tool in the drawing area opens a dialog where you enter the text, specify font, style, etc.

You can double-click on a text object you have inserted to change its text or settings.

Symbol

Clicking with this tool brings up a dialog where you can select any of the existing score symbols and incorporate this (at the desired font size) into your own symbol.

Set Color of Frame

When this is selected, the Color pop-up menu is used to select the color for the object frame.

Set Color of Fill

When this is selected, the Color pop-up menu is used to select the fill color for objects (if Fill is selected).

Fill

Click this if you want the object to be filled – you can then select a Fill Color for it from the Color pop-up menu.

Don't Fill

Click this if you do not want the object to be filled.

Color

Selects Frame or Fill Color for objects. The “Select Colors...” menu item brings up a standard color dialog.

Line Width

Allows you to change the line width used for the selected object.

The Note Linked pop-up menu lets you create symbols linked to note positions. This affects the whole symbol, not a selected graphic object:

Not Linked

The symbol is not linked to notes.

Linked/Left

The symbol is linked to a note, appearing to the left of the note.

Linked/Center

The symbol is linked and centered to a note.

Linked/Behind

The symbol is linked to a note, appearing to the right of the note.

The Functions pop-up menu contains the following items (some of these can also be accessed on the context menu for the User Symbols section):

New Symbol

Adds a new empty symbol to the section (and to the symbol list to the left in the editor).

Delete Symbol

Deletes the current symbol from the section.

Export User Symbols...

Allows you to save the current section with all available symbols as a separate file on disk.

Import User Symbols...

Loads settings for a complete section from disk. Note that this replaces the current settings.

Export/Import Symbol...

Lets you save or load individual symbols to/from disk. Importing a symbol replaces the current symbol on the section.

Delete

Deletes the selected object(s).

Select All

Selects all objects in the current symbol.

Transform – Scale Symbol

Lets you scale (resize) the selected object by specifying a percentage.

Transform – Mirror horizontal/vertical

Mirrors the selected object along the horizontal or vertical axis.

Transform – Flip ±90

Rotates the selected object by + or - 90 degrees.

Draw – Group

Groups the selected objects so that they are treated as one.

Draw – Ungroup

Ungroups the selected group.

Draw – Bring To Front/Send To Back

These items let you arrange the objects by moving them to the front or the back.

Align – Left/Right/Top/Bottom/Center Vertically/Center Horizontally

Aligns the selected objects to each other.

Display

Sets the zoom factor for the drawing area.

Working with chords

About this chapter

In this chapter you will learn:

- How to enter chord symbols manually and automatically using the “Make Chord Symbols” feature.
- Which settings can be made for chord symbols.

Inserting chord symbols

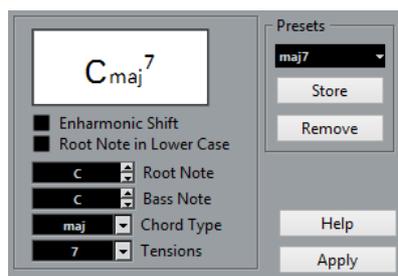
To insert chord symbols in the score, you can insert them manually by using the Chord Symbol button in the Inspector. You can also let Cubase analyze an existing recording and create the chord symbols.

Manually

To specify and enter a chord symbol, proceed as follows:

PROCEDURE

1. Open the Other section and select the Chord Symbol button.
2. Click in the score at the position where you want to insert the chord symbol.
The Edit Chord Symbol dialog opens.

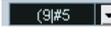


3. Enter the root note in the Root Note field.
You can either type in a chord letter or step through the chord letters using the up/down arrows to the right.
4. In the “Chord Type” field, specify a chord type.
You can either enter it directly (for example, by typing a “7”) or select an option from the pop-up menu (click the arrow button to open it).
5. Specify a tension in the Tension field.
Again, this can be done by typing or by using the pop-up menu. However, there are some special display options which you can only get by typing (see the table below). You might

also want to add some text here (such as “no third”). You can also select the basic tensions from the pop-up menu, and then add special options by typing.

6. If you want to have a special bass note (e. g. a C major with a D bass note), set the Bass Note pop-up menu to this note (this cannot be the same as the root note).
The program “remembers” the relation between root and bass note, so that if you change the root note, the bass note follows.
7. If you want the root note to be displayed in lower case, activate the “Root Note in Lower Case” checkbox.
8. If needed, activate the “Enharmonic Shift” option.
9. Click Apply.
The chord symbol appears in the score.
To open the Edit Chord Symbol dialog for an existing chord, double-click the symbol.
You can also right-click the symbol and select “Properties” on the context menu to open the dialog.

Tension Field

Character	Description	Example	Result
()	The tensions are enclosed in brackets.		C ^{9(#5)}
/	The tensions are separated by a slash sign.		C ^{9/#5}
|	The tensions are placed above one another.		C ^{9#5}
You can also combine several options. This is a combination of two options, along with a space to put the “9” above the “5”. Note that only one “(” sign is needed when the “|” option is used.			C ^(9#5)

Using Make Chord Symbols

If you have already recorded the chords for a project, Cubase can analyze them and create chord symbols:

PROCEDURE

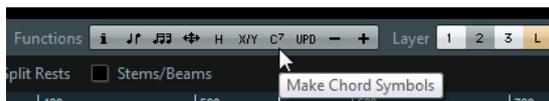
1. Open the recording in the Score Editor.
If you want the chords to be inserted on another track, you can create an empty part on that track and open it along with the recording.
2. If you like, make display settings for the chords. These settings are available in the Score Settings dialog, on the Project page (Chord Symbols subpage).
You can change all these settings after you inserted the chords as well.
3. Select the notes for which you want chord symbols to be created.
If you want chord symbols to be created for all chords on the track, use the Select All function on the Edit menu.

4. Use the **Up Arrow/Down Arrow** keys to make the desired staff active.
This should be the staff on which you want the chord symbols to end up.
5. On the Scores menu, select "Make Chord Symbols".
The chords appear. They can be moved, duplicated and deleted as any other symbol. You can also double-click on a chord symbol to edit it in the Edit Chord Symbol dialog (in the same way as when creating chords manually – see above).



A staff after using Make Chord Symbols.

Instead of using the "Make Chord Symbols" menu item, you can click the "Make Chord Symbols" button on the extended toolbar.



RELATED LINKS

[Adding guitar chord symbols on page 1135](#)

About the analysis

The MIDI chords are expected to be played in their most basic inversion. If not, an extra bass note is added. For example, the notes CEG are interpreted as C major, but GCE is interpreted as C major with a G bass note. If you do not want any interpretation of the inversion (i. e. no added bass notes) hold down **Ctrl/Cmd** while selecting Make Chord Symbols.

All selected notes on all staves are taken into consideration. Whenever there is any change on any staff, the notes are reinterpreted and a new chord symbol is added. This means you should probably avoid having the melody track in the Score Editor when you use Make Chord Symbols, or you get a lot more chords than you expect, possibly with strange tensions.

In addition to the above, the Quantize value is used. At the most, there is a new chord at each quantize position.

There must be at least three notes at a certain position for the program to interpret it as a chord. Also some combinations of notes simply do not make any sense to the program and do not produce any chords.

The analysis method is not perfect since the same set of notes can be interpreted differently depending on context. Some editing may be required. If you record the track solely to create chords automatically, play the chord as simple as possible, in the correct inversion, without added octaves, etc.

The Current Chord Display

Cubase features a handy chord recognition function that helps you identify chords in the Score Editor note display. To find out which chord is formed by simultaneously played notes, place the project cursor over the notes. All notes "touched" by the project cursor are analyzed and the Current Chord Display in the status line shows you which chord the notes form.



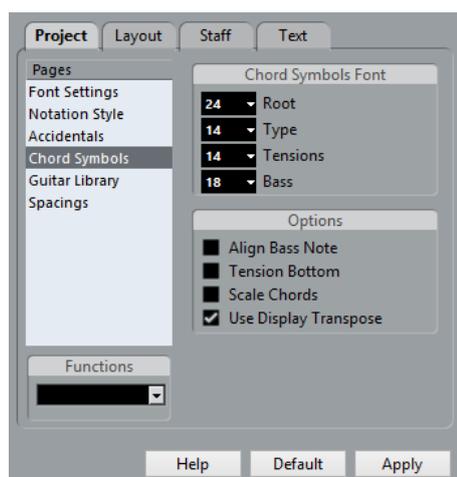
Global chord settings

In the Score Settings dialog on the Project page (Chord Symbols subpage), there are several global settings that affect how chords are displayed. These settings affect all chords in the project.

NOTE

There are several options in the Preferences dialog (Event Display–Chords) that also affect how chords are displayed.

Chord Symbols



Chord Symbols Font

- Use the four size value fields to select sizes for the root, the type, the tension, and the bass of a chord.

You can type in values or use the pop-up menus. Normally, you would want the “Root” size to be the largest and the “Tension” size to be the smallest.

Options

- If you want the root note to be aligned with the bass note, so that they are both displayed at the same vertical position, activate “Align Bass Note”.
- If you want the tensions to be displayed at the same vertical position as the root note (rather than a bit above the root note), activate “Tension Bottom”.
- If you want to scale a staff by using the Size setting on the Options tab of the Staff page in the Score Settings dialog and want the chords to be scaled accordingly, activate “Scale Chords”.
- If you want the chord symbols to be affected by the Display Transpose setting on the Staff page of the Score Settings dialog, activate “Use Display Transpose”.

Working with text

About this chapter

In this chapter you will learn:

- Which different types of text are available.
- How to enter and edit text.
- How to set font, size, and style.
- How to enter lyrics.

Adding and editing text symbols

This section describes the general procedure for adding and editing text symbols. There are several different types of text symbols, but the basic procedures are the same (except for block text symbols and page text symbols).

RELATED LINKS

[Different types of text](#) on page 1165

[Block Text](#) on page 1168

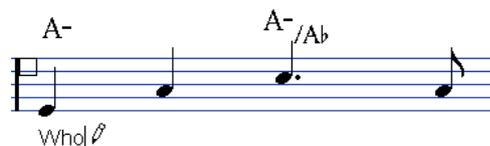
[Page Text](#) on page 1169

Inserting a text symbol

PROCEDURE

1. Make sure that the correct staff is active.
2. Select a font, size, and style for the text (or select a text attribute).
You can also change these settings after you inserted the text.
3. In the Symbols Inspector, open a symbol section.
The different text symbols are found in the Other section.
4. Right-click the text symbol in the section to select the layer for which you want add text.
Not all text symbols are available for all layers.
5. Click the text symbol and click in the score at the position where you want the text to appear.

If you are adding lyrics, you should click above or below a note (lyrics are centered around each note and positioned vertically to where you clicked).



6. Enter the text in the text box that appears.
You can use **Backspace** to delete letters, and move the cursor with the **Left Arrow/Right Arrow** keys.
 7. When you are done, press **Return**.
The text appears. You can move, duplicate or delete it as with any symbol.
-

RELATED LINKS

[Selecting font, size, and style for the text](#) on page 1163

[Lyrics](#) on page 1165

Importing Karaoke Lyrics as Text

If you activate the “Import Karaoke Lyrics as Text” option in the Preferences dialog (MIDI-MIDI File page), karaoke lyrics from MIDI files are converted to text on import. You can edit it in the same way as regular text.

About the melisma lines

When you add a text symbol, you can find a handle at the right edge of the text. By dragging this handle to the right, you can extend a “melisma line” from the text. This has several uses:

- If you are adding lyrics and want to indicate that a syllable should be sung over several notes:



- If the text is an advice about articulation or playing style, and you want it to apply to a certain musical phrase only:



- If the text is an advice about articulation or playing style, and you want it to apply from that point on in the score:



In the Score Settings dialog (Text tab), you can find two settings that determine the appearance of the melisma lines for text symbols:

- The Melisma Style pop-up menu is where you specify whether the line is solid or dotted.
- The Melisma End pop-up menu allows you to choose whether the end of the line is plain, has an arrow, or forms a “bracket” up or down.

Making space

Dragging staves is a way to edit distances within staves or between grand staves. Auto Layout makes the program “go through” the score and makes adjustments to measure widths, staff distances, etc.

RELATED LINKS

[Dragging staves](#) on page 1195

[Auto Layout](#) on page 1199

Editing the text

If you made a mistake when typing or for some other reason want to change text, double-click on a text block with the Object Selection tool, edit the text and press **Return** to close it.

- It is also possible to replace all occurrences of a certain word in the score, without having to edit the texts manually.

RELATED LINKS

[Find and replace](#) on page 1172

Selecting font, size, and style for the text

PROCEDURE

1. Select the text that you want to make settings for.
If nothing is selected, the settings you make are the “default settings”. The next time you insert text, these settings are used.
2. Open the Score Settings dialog and select the Text page.
3. Select a font from the Font pop-up menu.
How many and which fonts appear depends on what typefaces you have installed on your computer.

IMPORTANT

For regular text you should avoid the “Steinberg” fonts. These are the fonts Cubase uses for all scoring symbols, etc.

4. Select a text size from the Size pop-up menu (or enter one manually in the text field).
 5. You can also add one or several font options using the checkboxes and pop-up menus.
 6. Click Apply to apply the settings to the selected text.
Note that you can select other text blocks while the dialog remains open – the dialog is updated to reflect the settings of the selected text.
 7. When you are done, close the Score Settings dialog.
-

Special style options

Most of the options are common text style variations such as bold, italic, underline, etc. But there are also a few special style options:

Frame

Allows you to put the text in a rectangular (“Box”) or oval frame.

Melisma options

These determine the appearance of the “melisma line”.

Positioning

Allows you to select which side of the text block (left or right) is used for calculating its position. This has an effect in situations where that text block is moved automatically (as a result of an Auto Layout function, when you move bar lines manually, etc.). If, for example, the text block appears just in front of a note (to the left of it), it appears in a more sensible position after the adjustment if the “Right” option is selected.

Alignment: Left/Center/Right

Allows you to specify the alignment of the text. These options are only valid for texts with more than one line.

RELATED LINKS

[About the melisma lines](#) on page 1162

Text attribute sets

A text attribute set can be seen as a “preset” containing all font, size, and style settings. By creating text attribute sets for the settings you use most often, you can save a lot of time.

Creating a text attribute set

PROCEDURE

1. Open the Score Settings dialog on the Project page and select the Font Settings subpage.
 2. Open the Attribute Sets tab.
 3. On the Font Set pop-up menu, select the “Empty” set.
 4. Select a font, specify a size, and add style options using the checkboxes.
The options are the same as when you make font settings on the Text page in the Score Settings dialog (see above).
 5. Click in the text field of the Font Set pop-up menu and enter a name for the new text attribute set.
 6. Click Store to save the new text attribute set.
-

Using text attribute sets

To apply the settings in the text attribute set to one or several text blocks, select them, select the set from the Font Set pop-up menu on the Text page in the Score Settings dialog and click Apply. You can also apply a text attribute set to a text block directly in the score by right-clicking it and selecting the set from the context menu.

- If you select a text attribute set on the Text page when no text is selected in the score, the settings are used the next time you insert some text.

NOTE

After you have selected a set for a text block, there is a “link” between the text and the attribute set. Any changes to the attribute set affects all texts that use it (see below). You can still edit any font settings manually (on the Project–Font Settings subpage) but then the “link” to the attribute set is removed.

Editing text attribute sets

If you edit the settings in a text attribute set, all texts using this particular set are affected. This is very practical, since it allows you to use the same number of “generic” sets for all your projects (for titles, comments, lyrics, etc.), and simply change the fonts, sizes, etc. for a different project if

necessary. This also makes it easier to move projects between computers (which may not have the same fonts installed).

PROCEDURE

1. In the Score Settings dialog on the Project–Font Settings subpage, select the Attribute Sets tab.
 2. From the Font Set pop-up menu, select the attribute set that you want to edit.
 3. Change the settings as desired.
This includes the name of the set.
 4. Click Apply.
-

Different types of text

You can add various types of text to the different layers of the score. The selected layer specifies which type of text is available.

Regular text

This type of text is inserted by selecting Text in the Other section. You can insert this type of text on all layers.



The text is tied to the bar and staff position. If you move the bar or the entire staff, it moves with it.

Pasting text

You can paste text (e. g. from another program) into a text symbol in the score. To do this, select the text symbol and right-click it. Then, select “Text From Clipboard” from the context menu. This option is also available on the Functions submenu of the Scores menu.

Similarly, you can copy selected text by using the “Text To Clipboard” option from the context menu.

Lyrics

This type of text is inserted by selecting Lyrics in the Other symbol section. You can insert this type of text only on note layers.



When you insert lyrics, you should click below or above the note the syllable belongs to. The text then appears horizontally centered around the note and vertically positioned to where you clicked. You can later move it up or down, as with any symbol.

Lyrics are tied to the note position. If you move the note, the text moves with it. The spacing between notes is also adjusted to make the lyrics fit.

Inserting lyrics for a number of notes

PROCEDURE

1. With lyrics selected, click below or above the first note with the Draw tool.



2. A text input field opens. Enter the text (the word or syllable) for that note.
3. Press the **Tab** key.
The program moves on to the next note.



4. Input text for this note and press **Tab** again.
5. Proceed until the last note and then press **Return** or click outside the text box.

When you insert lyrics this way, the positions of the notes are automatically adjusted so that no lyric “block” overlaps another. If this is not what you want, you can activate the “Don’t Sync Lyrics” option in the Score Settings dialog on the Project–Notation Style subpage (Lyrics category). If this option is activated, the note positions are not affected, which may be preferable.

When entering words with several syllables you normally separate the syllables with a dash (-). By default, the dash signs are automatically centered between the syllables – if this is not what you want, activate the “Don’t Center Hyphens” option in the Score Settings dialog, on the Project–Notation Style subpage (Lyrics category).

Lyrics and measure widths

When you first enter lyrics, the result may look cramped, since the words take up more space than the notes (the lyrics are also selected just after entering the last word, which makes them look a bit odd when overlapping). To remedy this, use the auto layout function to automatically adjust the measure widths.

RELATED LINKS

[Auto Layout](#) on page 1199

Adding a second verse

To insert a second line of lyrics, proceed as follows:

PROCEDURE

1. Enter the new lyrics above or below the existing verse.
2. Select all the words that should be in the new verse.
3. Right-click the selected words to open the context menu.
4. Select the appropriate verse from the Move To Verse submenu (Verse 1–6).
This assigns the selected lyrics to the selected verse.

To indicate that the words belong to another verse, they are automatically displayed in another color. However, all verses are printed in black as usual.

- To select all words in one verse only, press **Shift** and double-click on the first word in that verse.

This selects all following words in the verse.

Inserting lyrics into voices

Each voice can have its own lyrics. If you have a vocal arrangement with several voices, you can add lyrics to them, one by one.

PROCEDURE

1. Make sure that the correct voice is selected (on the extended toolbar).
 2. In the Symbols Inspector, open the Other section and click on the Lyrics symbol.
 3. Click on the first note in the selected voice.
 4. Enter the lyrics for this voice, using the **Tab** key to move from note to note, as described above.
 5. Start over, by activating the next voice, clicking on the first note in that voice and proceeding as with the first voice.
 6. If needed, adjust the position of the lyrics for each voice (see below).
-

RELATED LINKS

[Entering notes into voices](#) on page 1093

Moving lyrics

If you want to move the lyrics up or down, for example to make room for a second verse, proceed as follows:

PROCEDURE

1. Hold down **Shift** and double-click on the first word in the lyrics.
All lyric "blocks" are selected.
 2. Drag one of the lyric blocks up or down.
All selected lyric blocks are moved accordingly.
-

Adding lyrics from the clipboard

If you want to prepare your lyrics in another program, you can import them into Cubase the following way:

PROCEDURE

1. Create the lyrics in another program.
Separate words with space as usual, syllables within words with dash signs (-).
 2. Copy the text.
 3. In Cubase, select the first note to which the lyrics will be added.
 4. Open the Scores menu and select "Lyrics from Clipboard" from the Functions submenu.
The lyrics are added, starting at the selected note.
-

Block Text

Block Text allows you to import text from a file on disk or from the clipboard. Proceed as follows:

PROCEDURE

1. Click the Block Text symbol in the Other section to activate the Draw tool.
You can insert block text on the project layer (for text that should appear on all pages, for example, the score title), on the layout layer (to print a title only for a particular track layout, for example, for a particular instrument), or on the note layer (this text only appears in the score for a particular part).
 2. Click in the score where you want to insert the text.
A regular file dialog appears.
 3. Select a file (TXT or RTF) to import.
 4. Click Open.
The text in the file is inserted into the score.
-

Options for inserted Block Text

Right-clicking on inserted Block Text brings up a pop-up menu with the following options:

Settings

Brings up the RTF Settings dialog. You can also open this by double-clicking the Block Text.

Import Text

Imports text from a text file or RTF file. The imported text replaces any text inserted at the position of the Block Text.

Update Text

Reloads the text from the file.

Text From Clipboard

Pastes the text from the clipboard into the Block Text.

Text To Clipboard

Copies the Block Text to the clipboard.

Hide/Show

Hides the inserted block text. To make the text visible again, activate the Hide checkbox in the filter bar and select "Hide/Show" on the context menu.

Properties

Brings up the RTF Settings dialog.

The RTF Settings dialog

Selecting "Settings" from the context menu (or double-clicking the Block Text) brings up a dialog with settings for the Block Text. These are:

Font

Lets you select the font to use for the Block Text. If "No Change" is selected, the font in the original file (if applicable) is used.

Size

The text size, as a percentage.

Draw Frame

If this option is activated, a frame is shown around the Block Text.

Word wrap

If this option is activated, line breaks are used to fit the text in the Block Text symbol.

Replace mode

In this mode, the Block Text box is opaque, covering what's under it.

Trans mode

In this mode, the Block Text box is transparent.

Lay Text

The Lay Text symbol allows you to insert layout text for multiple staves. This is available only on the layout layer.

To hide or show the inserted text for different staves in the layout, deactivate or activate the "L" column for the corresponding tracks on the Layout page of the Score Settings dialog. The text appears in all staves for which you have activated the "L" column. This means that the text is tied to the bar and staff position. If you move the bar or the entire staff, the text moves with it.

To enter layout text, proceed as follows:

PROCEDURE

1. In the Project window, select the tracks for which you want to enter text.
2. Open the Score Editor.
3. On the Other section of the Symbols Inspector, activate the Lay Text symbol and click at the position in the score where you want to insert the text.
4. Enter the text that you want to display for the Layout.
As with regular text, you can copy and paste text from external sources to this symbol.

RELATED LINKS

[Regular text](#) on page 1165

Page Text

The page text symbols are found in the Other section. If you insert page text on the project layer, it is part of the project layout and appears in all layouts.

The position of page text is not tied to a note, bar or staff position. In other words, it does not matter if you move other objects on the page, the page text stays where you inserted it. Typically, it is used for score titles, page numbers, copyright information and other text elements that you want displayed with all parts (on all pages if you like).

Entering page text

PROCEDURE

1. Open the Other section of the Symbols Inspector.
2. Click the Page Text symbol and click in the score.
It does not matter where you click – the positioning is specified in the Page Text dialog.

3. Enter the text that you want displayed in the field at the top of the dialog.
You can use special characters to add “variables” such as page numbers – see below.
 4. Adjust the positioning settings for the text.
 5. Select a text attribute set for the text, or make manual settings for font, size, and style.
 6. Click OK.
The text is inserted. You can adjust the positioning manually by dragging the text block.
-

Text adjustment options

Show on all Pages

If this option is activated, the text is shown on all pages. The “Except First” checkbox allows you to exclude the very first page.

Show on First Page

If this option is selected, the text is only shown on the first page.

Line

This determines how the text is aligned. For example, if you place several texts on “Top/Left”, you can sort them by entering the desired number of lines.

Toggle Position

When the Left or Right position option is selected to the right, activating this checkbox makes the text alternate between left and right alignment on even/odd pages.

Position buttons

Determines where on the page you want the text, vertically (Top/Bottom) and horizontally (Left, Center, Right).

Inserting variables

When you enter the text, you can also insert special characters or “place holders” for different attributes. When the text is displayed, these characters are replaced by their actual values (e. g. page numbers). The following variables are available:

%p

The current page number.

%l (lower case L)

The long staff name.

%s

The short staff name.

%r

The name of the project.

For example, if you enter the text “%l, %r, Page %p”, these variables might be shown as “1st Violin, Quartet No.2, Page 12” in the score.

Using the Score Settings (Text page)

In the Score Settings dialog on the Text page, you can find a number of text-related settings. The symbol buttons correspond to the symbols found in the Other section of the Symbols Inspector.

- On the Layer pop-up menu, select the layer that you want to use.

The text symbols available for this layer are displayed to the left of the pop-up menu.

- You can use the text symbols in the same way as you would use symbols from the Inspector or a symbol palette.

When you select a text symbol and move the mouse pointer over the score, the pointer changes to a pencil, and you can enter text at the position you click on.

RELATED LINKS

[Symbol details](#) on page 1147

The Notepad tab and the Selection tab

Below the text symbols and the Layer pop-up menu, you can find two tabs with large text entry fields.

- Use the Notepad tab to enter longer text passages. When you are happy with the text in terms of wording and length, select all or part of the text, and select a note in the score. Now, the Insert Lyrics button below the Notepad tab becomes available.

When you click Insert Lyrics, the selected text is entered into the score, starting from the note you selected.

- When you select text in the score and open the Selection tab, the selected words are shown in the text field. You can now change the wording of the text, and use the text format options to the left to change the appearance of the selected text. When you are done, click Apply to apply your changes to the selected text in the score.

Text functions

In addition to the text symbols that you can add to the different layers, you have other text functions at your disposal that support you while working on the score. These are described in the following sections.

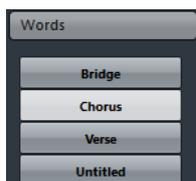
The Words Section

If you have certain words that you use a lot, you can save these as dedicated symbols in the Words section. This saves time, since you do not have to type the same word over and over again.

Storing a word

PROCEDURE

1. Open the Words symbol section.
This section is hidden by default.
2. Type in the desired word(s) in the text field at the top of the dialog.
3. Specify the text type (regular text or lyrics) with the Type pop-up menu.
4. Make settings for font, size, and style.
You can also use a text attribute set if you like.
5. Click Exit to close the dialog.
The words that you entered appear in the selected symbol field in the Words section.



Right-clicking one of the fields opens a context menu with a number of options:

- Select “Edit” to open the Custom Text Editor dialog.
 - Select “New” to add a new empty symbol to the Words section.
 - Select “Remove” to delete any unwanted symbols from the Words section.
 - Select “Open As Palette” to open the Words symbol palette.
-

RELATED LINKS

[Showing/Hiding Symbols Inspector Sections](#) on page 1126

Inserting a word

You insert words from the Words section as you would insert any regular symbol, by selecting the appropriate word and clicking in the score. However, you can edit the word after inserting it, just as with text inserted by typing.

Find and replace

This function allows you to replace all occurrences of a certain word or group of words, with another word or group of words. The replacement is done once and for all, for all text symbol types, regardless of font, size, and style settings.

PROCEDURE

1. Open the Scores menu and select “Find and Replace” from the Functions submenu. The Find and Replace dialog opens.



2. In the Find value field, enter the words to replace.
 3. If you want all instances of the words to be replaced, regardless of upper/lower case, deactivate the “Case Sensitive” option.
 4. If you do not want to replace the words if they are a part of another word, activate the “Entire Word” option.
For example, if you want to replace the word “string” but not the word “stringendo”, you should activate “Entire Word”.
 5. In the “Replace” field, enter the words that are to be used as replacement.
 6. Click OK.
Now all occurrences of the “Find” words are replaced with the “Replace” words.
-

Staff names

You can make settings for staff names in several places:

- In the Score Settings dialog on the Layout page, you specify whether the staff names are shown at all and whether to use the names of the actual edited tracks in the score. In a multi-track layout, you can choose for which tracks the staff names are shown by clicking in the “N” column for each track.
- You specify a long and short staff name in the Score Settings dialog, on the Staff page (Main tab).

These are used if you do not use the “From Tracks” option on the Layout page of the Score Settings dialog. The long name is displayed for the first system only, and the short name for the following systems. If you want a name at the top of the page only, leave the “Short” name field empty.

IMPORTANT

If the “Show Long Staff Names on new Pages” option is activated in the Score Settings dialog on the Project–Notation Style subpage (Staff Names category), the long name is displayed for the first system on every page.

Selecting a font for staff names

PROCEDURE

1. Open the Score Settings dialog on the Project page and select the Font Settings subpage.
 2. Select the Project Text tab.
 3. Use the “Font For” pop-up menu to select “Staff Names”.
 4. Select font, size, and styles for the staff names (or use a text attribute set).
 5. Click Apply and close the Score Settings dialog.
-

Additional staff name settings

- If you activate the “Show Staff Names to Left of Staff” option in the Score Settings dialog on the Project–Notation Style subpage (Staff Names category), the staff names are shown to the left of the staves, instead of above them.
- You can define separate subnames for the upper and the lower staff in a polyphonic or split system.
- You can fine-tune the vertical and horizontal position of staff names with some of the options on the Project–Spacings subpage of the Score Settings dialog.

RELATED LINKS

[Staff names](#) on page 1172

Bar Numbers

Bar Number settings can be made in several places as well.

General settings

PROCEDURE

1. Open the Score Settings dialog on the Project page and select the Notation Style subpage.
2. Scroll down the list to the “Bar Numbers” category.
3. Use the “Show every” setting to specify how often bar numbers are shown.
The options are “First Bar” (bar numbers shown for the first bar on each staff), “Off” (no bar numbers shown) and any number. Click in the State column and use the mouse wheel to select the desired option.
4. If you like, activate the “Show Range with Multi-Rests” option.
If this option is activated, and you have a multi-rest, the bar number at the beginning of the multi-rest shows a range, indicating the length of the multi-rest.
5. If you want the bar numbers to be displayed below the bar lines, activate the “Below Bar Lines” option.

6. Click Apply and close the Score Settings dialog.
-

Font settings

As with many of the other fixed text elements, you can select a font, size, and style for bar numbers in the Score Settings dialog, on the Project-Font Settings subpage.

Spacing

On the Project-Spacings subpage of the Score Settings dialog, you can find four settings that relate to bar numbers:

First Bar Number – Horizontal Offset

Sets the horizontal distance between the bar number and the bar line for the first bar on each staff.

First Bar Number – Vertical Offset

Sets the vertical distance between the bar number and the bar line for the first bar on each staff.

Other Bar Numbers – Horizontal Offset

Sets the horizontal distance between the bar number and the bar line for all other bars.

Other Bar Numbers – Vertical Offset

Sets the vertical distance between the bar number and the bar line for all other bars.

Offsetting bar numbers

If you double-click on a bar number, a dialog appears, allowing you to skip a number of bars in the otherwise continuous bar numbering.



This is used for example when a section repeats. Say, you have a repeat of bar 7 and 8, and want the first bar after the repeat to have the number 11, not 9. To achieve this, you double-click on the "9" and insert an offset of "2".

It is also useful if the score starts with an upbeat, and you want the first "real" bar to be numbered 1. In that case you would specify an offset of "-1" for the second bar, and make sure that the bar number for the upbeat bar is hidden.

- Bar number offsets belong to the Project layer and are shown for all tracks and layouts.

Settings for other fixed text elements

You can make settings for virtually all text and numbers that appear in the score.

PROCEDURE

1. Open the Score Settings dialog on the Project page and select the Font Settings subpage.
2. Select the Project Text tab.
3. Use the "Font For" pop-up menu to select a text type to make settings for.
4. Use the options in the dialog to change the settings.
5. Click Apply to apply the settings to all elements of the selected type.

To close the dialog, click the close button at the top right of the dialog window.



Bar Numbers before and after changing their font settings.

You can also define text attribute sets on the Font Settings subpage, as a means to quickly change text.

Note that you can select a defined attribute set from the context menu opened when right-clicking on a text element.

RELATED LINKS

[Text attribute sets](#) on page 1164

Working with layouts

About this chapter

In this chapter you will learn:

- What layouts are and what they contain.
- How to create layouts.
- How to use layouts for opening combinations of tracks.
- How to apply, load, save and delete layouts.
- How to import and export layouts.
- An example of how layouts can be used.

Background: Layouts

Layouts can be viewed as “presets” containing settings for the layout layer: staff spacing, bar lines, layout symbols, etc.

When to use layouts

- You need to format the score differently when you print the entire score and when you extract parts for single instruments (or groups of instruments). Layouts allow you to keep different sets of “looks” for the same track or set of tracks. You might for example have one layout for each single instrument and one for the entire score.
- By selecting another layout on the Layout page of the Score Settings dialog, you can switch to another combination of tracks without having to leave the Score Editor.

What makes up a layout?

A layout contains the following items and properties:

- The inserted Layout symbols.
- All settings on the Layout page of the Score Settings dialog.
- The vertical spacing of the staves.
- Bar line spacing.
- Broken bar lines.

NOTE

Note that Project symbols, bar line types and bar number offsets are part of the Project layer, and appear in all layouts.

RELATED LINKS

[The available symbols](#) on page 1127

How layouts are stored

Layouts are created automatically when you edit a single track or a combination of tracks. They are an integral part of the specific track combination, which means you do not have to save them separately.

Creating a layout

Layouts are created automatically when you open a new combination of tracks for editing.

Each track may have been edited before, individually or together with other tracks, it does not matter. What matters is that you open precisely these tracks. For example, to create a layout for a string quartet, select parts on the corresponding tracks and press **Ctrl/Cmd-R**.

IMPORTANT

The order of the tracks does not matter – you can reorder them in the Project window without removing the layout. However, the spacing of the staves in the layout is related to the order of the tracks.

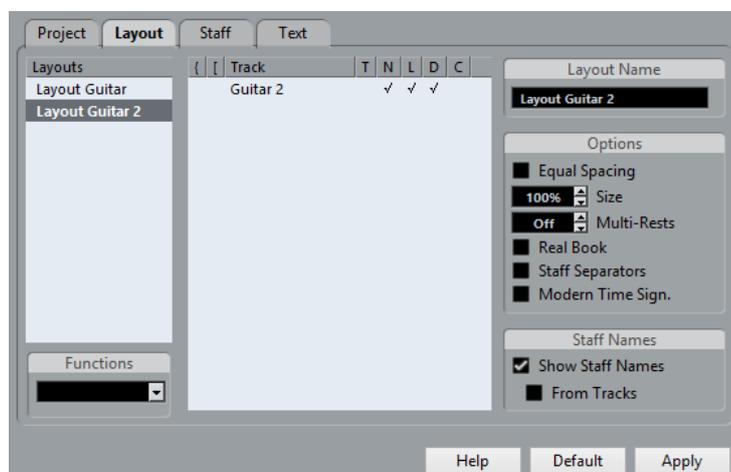
Opening a layout

The “Open Layout” command on the Scores menu opens a dialog listing all available layouts for the Project.

- Select the desired layout in the list and click OK to open the tracks contained in the layout in the Score Editor.
This is a quick way for opening several tracks in the Score Editor directly from the Project window.

Layout operations

The Score Settings dialog contains a Layout page, where you can make settings for the different layouts. To the left of the dialog, all existing layouts in the project are listed (this is the same list as in the Open Layout dialog, see above). The layout used is highlighted in the list.



Opening the tracks in a layout

To select another combination of tracks for editing, select the corresponding layout in the list.

- You can keep the dialog open while you are editing, and use this function for selecting which tracks to edit.

Importing layout symbols

By selecting another layout and selecting “Get Form” from the Functions pop-up menu below the list, you import all Layout symbols (inserted from the Layout section in the Symbols Inspector) from the selected layout into the current layout.

Managing layouts

- To rename a layout, select it in the list and enter the desired name in the Name field to the right in the dialog.
Initially, a layout gets the name of one of the edited tracks – it may be a good idea to give each layout a more informative name.
- To remove a layout you no longer need, select it in the list and select “Remove” on the Functions pop-up menu.
- To remove all layouts for which there no longer are track combinations, select “Clean Up” on the Functions pop-up menu.

Importing and exporting layouts

By selecting a layout and selecting “Export” or “Import” from the Functions pop-up menu below the list, you can export or import a Layout. Note that all Staff settings are taken into account, when exporting or importing a layout.

Working with Display Transpose

You can specify for each staff in a layout whether it should use Display Transpose. In the Score Settings dialog on the Layout page, click in the D column to activate or deactivate the option. Note that this setting affects this layout only.

Using layouts – an example

The following text outlines the basic steps for extracting a musical part from a full score.

PROCEDURE

1. Prepare the entire score, including all formatting.
This might include inserting project layer block text for the score title, setting the bar line type, etc.
2. Open the Score Settings dialog on the Layout page and enter the desired name in the Name field (for example “Full Score”).
3. Close the Score Editor.
4. Open a single track, for example a woodwind part.
The Project layer settings automatically appear in the new single track layout.
5. Prepare a layout for the woodwind part.
You might for example move bar lines, add endings, activate multiple rests, etc.

You can also import all layout symbols from the “Full Score” layout, by opening the Score Settings dialog on the Layout page, selecting the “Full Score” layout in the list to the left, and selecting “Get Form” from the Functions pop-up menu.

IMPORTANT

Be careful not to change any of the properties which are not part of the layout. This modifies the “Full Score”, too.

6. Enter the desired name for the new layout in the Name field on the Layout page of the Score Settings dialog and click “Apply”.
-

RELATED LINKS

[Importing layout symbols](#) on page 1178

Marker Track to Form

If you have created markers in the Project window which denote the start of each new “section” in your music (verse, bridge, chorus, etc.), you can automatically transfer these markers into the current layout.

PROCEDURE

1. Open the Scores menu, open the Advanced Layout submenu and select “Marker Track to Form”.
Now, rehearsal marks and double bar lines are inserted in the score, at the position of each marker.
 2. If you want the names of the markers shown as well, open the Advanced Layout submenu again and select “Display Markers”.
-

Working with MusicXML (Cubase Pro only)

Introduction

MusicXML is a music notation format developed by Recordare LLC in 2000 based primarily on two academic music formats. It allows the representation of scores in the current symbolic representation of western music notation, used since the 17th century. With Cubase you can now import and export MusicXML files created with version 1.1. This makes it possible to share and exchange sheet music with people who are using score writing programs such as Finale and Sibelius.

NOTE

As MusicXML is supported to various degrees by different programs, you always have to do manual adjustments.

What is MusicXML used for?

The MusicXML file format can be used for the following purposes:

- Representation and printing of sheet music
- Exchange of sheet music between various score writing programs
- Electronic distribution of musical scores
- Storage and archiving of scores in an electronic format

Notational representation vs. musical performance

MusicXML is a music notation file format, that is, it deals especially with the layout of music notation and the correct graphical representation, i. e. how a piece of music should look.

However, MusicXML music data also contains elements that define how a piece of music should sound. For example, these are used when creating a MIDI file from MusicXML. This means that MusicXML has things in common with MIDI.

MIDI is a music interchange format for performance applications like Cubase or other sequencers. The MIDI file format is designed for playback, i. e. the main focus of the MIDI file format lies in the performance, not in the notation.

Is MusicXML better than MIDI?

The following sections inform you about the advantages of MusicXML and MIDI regarding note representation and sound.

Advantages of MusicXML

MIDI tracks hold MIDI notes and other MIDI data. A MIDI note in Cubase is only defined by its position, length, pitch and velocity. This is not enough to decide how the note will be displayed in a score. For a correct representation, Cubase also needs the following information:

- Stem direction, beaming.
- Expression marks (staccato, accent, ties and slurs).
- Information about the instrument in the score.
- Key and basic rhythm of the piece.
- Grouping of notes, etc.

MusicXML can save a great part of this information. However, you have to adjust the scores with the tools available in the Score Editor.

Advantages of MIDI

Although MusicXML has obvious advantages in the representation of musical scores, there are also restrictions in sound. This is due to the fact that MusicXML as a music notation format has a graphical background and is designed for exchanging representation, not sound.

When playing back MusicXML files in Cubase, the following parameters, among others, are not considered:

- On and Off velocities
- Dynamics
- Controller data
- SysEx
- Standard MIDI file meta events
- Audio
- All Cubase-specific data like automation, MIDI effects, Input Transformer, etc.

Importing and exporting MusicXML files

Cubase can import and export MusicXML files, which makes it possible to transfer musical scores to and from applications that support this file format. However, there are some restrictions concerning the parameters supported by Cubase.

Importing and exporting Notes

Parameter	Export	Import
Pitch	Yes	Yes
Length	Yes	Yes
Staves	Yes	Up to two per staff
Voices	Yes	Up to four per staff
Accidentals	Yes	Yes
Ties	Yes	No

Parameter	Export	Import
Dots	Yes	No
Stem	Yes	Yes
Beams	Yes	No
Grace Notes	Yes	Yes
Rests	Yes	Yes

Importing and exporting Layouts

Parameter	Export	Import
Page Size	Yes	No
Page margins	Yes	Yes
Page scaling	Yes	Yes
Page breaks	Yes	No
System breaks	Yes	Yes
Distance between staves and systems	Yes	Yes
Left/right Inset	Yes	No
Distance between measures	Yes	No
Hidden staves	Yes	Yes
x and y positions of symbols	Yes	Yes

Importing and exporting Symbols

Parameter	Export	Import
Keys	Yes	Yes
Clefs	Yes	Yes
Time Signature	Yes	Yes
Dynamics	Yes	Yes
Ornaments	Yes / incomplete	Yes / incomplete

Parameter	Export	Import
Articulations	Yes / incomplete	Yes / incomplete
Technicals	Yes / incomplete	Yes / incomplete
Lyrics	Yes	Yes
Chord Symbols	Yes	Yes
Damper Pedal	Yes	Yes
Dynamics	Yes	Yes
Rehearsals	Yes	Yes
Text	Yes	Yes
Layout Text	Yes	N.A.
Project Text	Yes	"Credits"
Dashes	Yes	Yes
Endings	Yes	Yes
Octave Shift	Yes	Yes
Bar line types	Yes	Yes
Slurs	Yes	Yes
Hammer-on/pull-off	No	No

Importing and exporting Formats

Parameter	Export	Import
Display Transpose	Yes	Yes
Drum notation	Yes	Yes
Short / long staff names	Yes	Yes
Program changes	Yes	N.A.
Music font	Yes (if Jazz font)	Yes
Tablature (including String tunings)	Yes	Yes

Importing MusicXML files

PROCEDURE

1. Open the File menu and open the Import submenu.
 2. On the submenu, select "MusicXML...".
 3. In the file dialog that opens, locate and select the MusicXML file and click "Open".
 4. Another file dialog opens in which you can select the project folder for the new project. Select an existing project folder or create a new one by clicking "Create" and entering a name in the dialog.
 5. A new project is created with the name of the MusicXML file.
-

Exporting MusicXML files

PROCEDURE

1. Set up the score the way you want it in the Score Editor of Cubase.
 2. Open the File menu and open the Export submenu.
 3. On the submenu, select "MusicXML...".
Note that this option is only available when the Score Editor is open.
 4. A file dialog opens in which you can choose an existing empty folder or create a new folder for saving the MusicXML file (with the extension ".xml").
-

Designing your score: additional techniques

About this chapter

In this chapter you will learn:

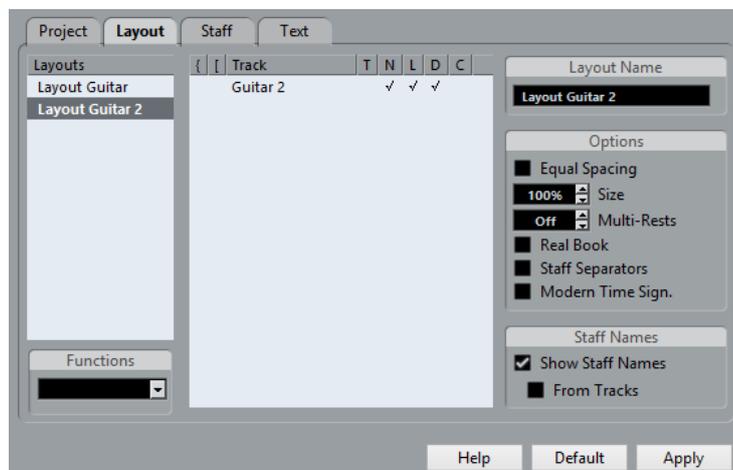
- How to change the staff size.
- How to create multi-rests.
- How to add and edit bar lines.
- How to create upbeats.
- How to set measure spacing and the number of bars across the page.
- How to control staff and grand staff spacing.
- How to use the Auto Layout dialog.
- How to use the Reset Layout function.
- How to break bar lines.

IMPORTANT

Before you start designing the score page layout, you should open the Page Setup dialog on the File menu, and make settings for paper size, print scale and margins!

Layout settings

The Layout page of the Score Settings dialog contains a number of settings that affect the display of the current layout.



The track list

The track list lists the tracks included in the layout and allows you to make the following settings:

Brackets

These two columns allow you to add braces or brackets, encompassing any number of staves in the layout.

T

This is relevant if the “Modern Time Sign.” option is activated to the right. In that case, you use this column to specify for which tracks the time signature is shown – see below.

N

This option lets you specify for each staff in a layout whether the staff name is shown.

L

If this is activated, any layout symbols are shown; otherwise they are hidden. For example, this allows you to have rehearsal marks shown for the top staff only in a multi-staff layout.

D

This option lets you specify for each staff in a layout whether it should use Display Transpose.

C

This option lets you specify which staff should show the chord track symbols. The chord track symbols can only be shown on one staff.

RELATED LINKS

[Adding brackets and braces](#) on page 1198

[Displaying the Chord Symbols from the Chord Track](#) on page 1198

Equal Spacing

Activate this option when you want a note to take up space according to its note value. If Equal Spacing is activated, two sixteenth notes take up as much space as one eighth note, for example.

Size

Changes the size of all staves.

RELATED LINKS

[Staff size](#) on page 1187

Multi-Rests

Whenever more than one-bar rests occur, the program can replace these with a multi-rest symbol. This parameter allows you to set how many empty bars are “allowed” before Cubase collects them into a multi-rest. “Off” means “never”.

RELATED LINKS

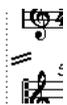
[Multiple rests](#) on page 1190

Real Book

If this option is activated, clef symbols are not set out at the beginning of each staff, only on the first staff on each page.

Staff Separators

If this option is activated, separator symbols are inserted at the beginning of each grand staff.



A staff separator between two systems

Modern Time Signature

If this option is activated, time signatures are shown above the staves rather than in them. You can set the size of the modern time signature in the Time Sign section on the Project-Notation Style subpage of the Score Settings dialog. When modern time signature is selected, you use the "T" column in the track list in the Layout page to specify for which tracks time signatures are displayed.



- If you prefer to display the score in a more modern way, check out the other options on the Notation Style subpage.
For descriptions of the options use the Help button in the dialog.

Staff size

You can set the staff size as a percentage value of the normal size.

For one staff

To set the staff size for one staff, proceed as follows:

PROCEDURE

1. Make sure that the staff you want to edit is active.
 2. Open the Score Settings dialog on the Staff page and select the Options tab.
 3. Adjust the Size parameter in the System Sizes section.
The values range from 25 % up to 250 % of the normal size.
 4. Click Apply.
-

For all tracks in a layout

To set the staff size for all tracks in a layout, proceed as follows:

PROCEDURE

1. Open the Score Settings and select the Layout page.
2. Change the Size parameter.
The values range from 25 % up to 250 % of the normal size.

3. Click Apply.

RESULT

All staves now get the desired size. Staves that have individual size settings (see above) still are proportionally smaller/larger.

This setting is part of the layout and can be used when printing a full score slightly smaller than the parts for each instrument, for example.

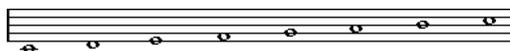
Hiding/showing objects

Any object on a page can be hidden, including notes, rests, symbols, clefs, bar lines, even entire staves.

This can be useful in the following situations:

Printing scales

If you want to create scale examples, enter the notes and hide time signatures, bar lines and other unwanted objects.



A scale created with hidden bar lines, time signatures, etc.

Graphic notation

By hiding bar lines, you can produce graphic notation.

Hiding notes meant for playback only

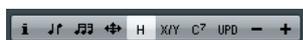
If you have recorded your music, you may have added glissandos, falls, etc. that sound fine but result in a lot of unnecessary notes. You probably want to hide those notes and insert the suitable symbols instead.

Hiding

To hide items, proceed as follows:

PROCEDURE

1. Select all the items you want to hide.
2. Select "Hide/Show" from the Score menu or click the "H" (Hide) button on the extended toolbar.



Notes can also be hidden by selecting them, clicking the "i" button on the extended toolbar and ticking the Hide Note checkbox in the Set Note Info dialog.

IMPORTANT

If the Hide option in the filter bar is activated, hidden objects are shown in a lighter tone so that they are still visible and you can select them.

RELATED LINKS

[Other note details](#) on page 1106

Hiding in the current layout only

If you want the hiding to be “local” to the current layout, hold down **Ctrl/Cmd** when selecting “Hide/Show” as described above.

IMPORTANT

This is not possible when hiding notes, only other symbols.

NOTE

You can also move hidden objects to the layout by right-clicking the “Hide” marker and selecting “Move to Layout”.

Viewing hidden objects

The filter bar (shown by clicking the “Set up Window Layout” button on the toolbar and activating the Filters option) contains two options related to hidden objects:

- If you activate the “Hidden Notes” option, all hidden notes in the score are shown. Deactivating “Hidden Notes” hides the notes again.
- If you activate the “Hide” option, all hidden objects (except notes) are indicated by a “Hide” text marker.



Showing one object

PROCEDURE

1. Make sure that “Hide” is activated on the filter bar.
 2. Click the “Hide” text marker below the object you want to display again. The text is selected.
 3. Press **Backspace** or **Delete**. The object appears. Undo is available if you change your mind.
-

Showing all objects

If you select “Hide/Show” from the Scores menu again, all hidden objects are displayed.

- You can also use the Reset Layout function to permanently display hidden notes and objects.

RELATED LINKS

[Reset Layout](#) on page 1201

Showing a hidden note

While all hidden notes can be made visible by ticking the Hidden Notes checkbox on the filter bar, you may want to make some of them “permanently” visible again:

PROCEDURE

1. Activate the Hidden Notes checkbox on the filter bar.
2. Select the notes that you want to “un-hide”.

In the Preferences dialog (Scores–Colors for Additional Meanings) you can set the color for hidden notes.

3. Double-click one of the notes.
 4. Deactivate the Hide Note option in the Set Note Info dialog and click Apply.
-

Coloring notes

You can use the color pop-up menu on the toolbar to colorize selected notes, e. g. for educational purposes.

RELATED LINKS

[Coloring notes](#) on page 1108

Multiple rests

Multiple consecutive rests can be automatically displayed as multi-rests.



A multi-rest over three bars

PROCEDURE

1. Open the Score Settings and select the Layout page.
 2. Set the Multi-Rests option to the number of empty bars that are “allowed” before Cubase displays them as a multi-rest.
For example, a value of 2 means that three or more consecutive empty bars are displayed as a multi-rest. If you set this to “Off”, multi-rests are not used.
 3. Click Apply and close the dialog.
-

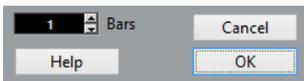
RESULT

The multi-rests now appear in the score.

Splitting multi-rests

To divide one long multiple rest into several shorter ones, proceed as follows:

PROCEDURE

1. Double-click the multi-rest symbol.
The Split Multi-Rest dialog appears:
The image shows a dialog box titled 'Split Multi-Rest'. It has a text input field containing the number '1' and the label 'Bars' to its right. There are three buttons: 'Cancel' at the top right, 'Help' at the bottom left, and 'OK' at the bottom right. The 'OK' button is highlighted with a dashed border.

1	Bars	Cancel
Help		OK
2. In the dialog, enter the bar number where you want the first split.
3. Click OK.
If you need more splits, double-click any multi-rest symbol and proceed as above.

IMPORTANT

The program automatically splits multi-rests at time signature changes, double bar lines, repeat signs and rehearsal marks.

Multi-rest appearance

The Project page in the Score Settings dialog contains several subpages, on which you can make settings for multi-rests:

- The subpage “Notation Style” contains the following settings concerning multi-rests:

Multi-Rests – Church Style

If this option is activated, multi-rests are shown in “church style” (vertical bars), rather than with the regular, horizontal symbols.

Multi-Rests – Numbers above Symbol

If this option is activated, the numbers are shown above the multi-rest symbol, instead of below it.

Multi-Rests – Snap Rests moved with the Layout tool

If this option is activated, rests automatically snap to “intelligent” positions in the score (i. e. positions used in regular notation) when moved with the layout tool. If this is deactivated, rests can be positioned freely.

Bar numbers – Show Range with Multi-Rests

If this option is activated, and bar numbers are displayed, the bar numbers of a multi-rest are shown as a range.

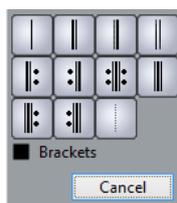
- On the Spacings subpage of the dialog, you can adjust the height and width of multi-rest symbols.
- On the Font Settings subpage, you can select a font for the multi-rest numbers (select “Multi-Rests” in the “Font For” pop-up menu and make the desired settings).

Editing existing bar lines

For each bar line, you can choose whether you want a regular, single bar line, a double bar line, a repeat sign, etc.:

PROCEDURE

1. Double-click the bar line for which you want to edit the settings.
A dialog appears with a number of bar line types.



2. If you want the bar line to be shown with “brackets”, activate the Brackets checkbox.
This is only relevant for repeat signs.



3. Click the desired bar line type.
The dialog closes and the bar line type is changed.
4. If you do not want to display bar lines at the beginning of the parts, open the Score Settings dialog on the Project–Notation Style subpage (Bar Lines category) and activate the “Hide First Bar line in Parts” option.

NOTE

The bar line types are part of the Project layer – any changes you make are reflected in all layouts.

Creating upbeats

The following methods describe how you can create upbeats in the Score.

By using the Pickup Bar feature

With this method, the upbeat actually contains exactly the number of beats displayed. That is, if you have an upbeat of one beat, your project starts with one bar in 1/4 time.

PROCEDURE

1. Change the time signature of the first bar to the length of the upbeat.
2. Insert a time signature of the correct kind (the time signature used throughout the project) in the second bar.
To insert a time signature, select it in the “Time Signature” section in the Symbols Inspector and click in the Score with the Draw tool.

3. Enter the notes in the upbeat into the first bar.



The first bar before making any adjustments

4. Double-click the time signature for the upbeat bar.
The Edit Time Signature dialog appears.
5. Activate the “Pickup Bar” option and click OK.



Now, the time signature of the first bar takes on the look of the second bar’s signature, while the time signature in the second bar is hidden.



6. If you use bar numbers, double-click the first bar number and enter an offset of -1.
 7. Adjust the display of bar numbers and hide the “0” in the first measure.
-

By hiding rests

With this method, the first bar actually gets the same time signature as the following bars – it only looks like an upbeat bar:

PROCEDURE

1. Enter the notes in the upbeat into the first bar.



The first bar before making any adjustments

2. Hide the rests that precede the notes.
3. Drag the bar line between measure one and two to adjust the width of the bar.



After hiding the rest and dragging the bar line

4. If you like, move the notes in the upbeat measure, using the Layout tool.
5. If you use bar numbers, adjust them as described in the previous example.



The final upbeat

Setting the number of bars across the page

You can specify how many bars you want to display across the page.

Automatically

- When you open a new combination of tracks for editing, the number of bars across the page is determined by the “Default Number of Bars per Staff” setting in the Preferences dialog (Scores–Editing page).
- In the Auto Layout dialog, you can set the maximum number of bars across the staff.

RELATED LINKS

[Auto Layout](#) on page 1199

Manually

In Page Mode, you have full control over the number of bars appearing across the page, by using the Number of Bars dialog or the tools.

NOTE

If you want to use the “Max. number of Bars” option in the Auto Layout dialog, you should do this before you adjust the number of bars manually.

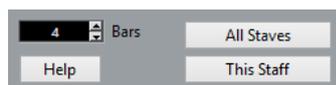
RELATED LINKS

[Auto Layout](#) on page 1199

Using the Number of Bars dialog

PROCEDURE

1. Make a staff active in the system where you want to make changes.
This means that if everything looks fine until for example the fifth system, activate one of the staves in this system.
2. Open the Scores menu and select “Number Of Bars” from the Advanced Layout submenu. The Number of Bars dialog opens.



3. Set the desired number of bars across the page.
 - To change the number of bars for the active staff only, click "This Staff".
 - To change the number of bars for the active staff and all following staves, click "All Staves".

In other words, to set all systems on all pages to the same number of bars, make the very first staff active and use the All Staves option.
-

Using the tools

- To make a bar "fall down" on a new staff, use the Split tool to click its bar line.



Before and after moving the third bar one staff down

- To bring the bar back up to the previous staff, use the Glue tool to click the last bar line on the upper of the two staves.

This in fact moves all measures in the lower staff to the upper staff.



Moving bar lines

The following operations can be made using the regular Object Selection tool or the Layout tool.

Moving a bar line

If you drag a bar line to the left or right, the surrounding bars are adjusted proportionally.

Moving bar lines on all staves

If you hold down **Alt** when dragging a bar line, all bar lines below the one you drag are moved accordingly.

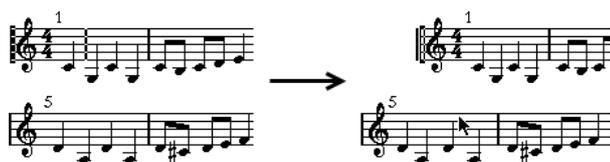
Moving a single bar line separately

If you hold down **Ctrl/Cmd** while dragging a bar line, the widths of the surrounding bars are not affected.



Making an indent on one line

- To create an indent, simply drag the first or last bar line on a staff. The sizes of all measures are adjusted proportionally.



Before and after dragging the first bar line on the first staff

Making indents on several lines

If you hold down **Alt** and drag the first or last bar line in a system, all following systems get the same indent. If you want all lines on all pages to be modified in the same way, hold down **Alt** and drag the appropriate bar line on the first system of the score.

The last bar line in the score

Cubase attempts to move the last bar line and space the bars on the last line in a sensible way. But you can change this manually by dragging the last bar line if you like. To change the type of the last bar line, double-click it and select the desired type.

Resetting bar spacing

To reset the bar spacing to standard values for several lines, proceed as follows:

PROCEDURE

1. Locate the first line for which you want to reset the bar spacing, and make one staff in that system active.
2. Select "Number of Bars" from the Advanced Layout submenu on the Scores menu.
3. Specify the number of bars that you already have on the line.
4. Click "This Staff".
Clicking "All Staves" resets the lines of all staves in the score.
5. Close the dialog.
The bar spacing is reset for the selected staff and all following staves.

RELATED LINKS

[Using the Number of Bars dialog](#) on page 1193

Dragging staves

For the following operations, you can use the Object Selection tool or the Layout tool.

NOTE

Dragging staves can only be done in Page Mode.

Adding space between two grand staves

PROCEDURE

1. Locate the first staff in the lower of the two systems that you want to spread apart.
2. Click just to the left of the first bar line and keep the mouse button pressed. The entire staff is selected.
3. Drag downwards until you have reached the desired distance between the staves and release the mouse button.



Before...



...and after dragging the upper system

Setting the same distance between all grand staves

PROCEDURE

1. Hold down **Alt** and drag the first staff of the second system, until you have reached the desired distance between this and the first system.
2. Release the mouse button. The distances between all the systems are adjusted accordingly.

IMPORTANT

This operation affects the system you drag and all following systems.

Setting the distance between staves within a grand staff

PROCEDURE

1. Locate the lower staff in the grand staff that you want to spread apart.
2. Click just to the left of its first bar line and keep the mouse button pressed. The entire staff gets selected.
3. Drag downwards or upwards and release the mouse button.



Dragging apart the staves in a piano system.

The new distance is set for the two staves.

Setting the same distance between staves in several systems

PROCEDURE

1. Hold down **Alt** and drag the desired staff as described above.
 2. Release the mouse button.
The corresponding staves in all following systems are moved accordingly.
-

Moving one staff only

You may want to move one staff without affecting any other staff in any way:

PROCEDURE

1. Hold down **Ctrl/Cmd**.
 2. Drag any staff as described above.
-

Moving staves between pages

By using the “Move to Next/Previous Page” commands on the Staff context menu, you can quickly edit the page breaks.

Moving staves to the next page

PROCEDURE

1. Locate and activate the staff you want to move to the top of the next page.
This can be any staff except the first staff on the page.
 2. Right-click the rectangle to the left of the staff, and select “Move to Next Page” from the context menu.
The active staff (and any following staves on the page) are moved to the next page.
-

Moving staves to the previous page

PROCEDURE

1. Make the staff at the top of the page the active staff.

If any other staff is active, the “Move to Previous Page” option cannot be used. Also, the function does not work for the first staff on the first page.

2. Right-click the rectangle to the left of the staff, and select “Move to Previous Page” from the context menu.

The active staff, and as many of the following staves as there are room for, are moved to the previous page. If the previous page is already “full”, nothing happens.

Adding brackets and braces

Brackets and braces are added on the Layout page of the Score Settings dialog. The settings you make are specific for the current layout, i. e. you can have different brackets or braces set up for different track configurations.

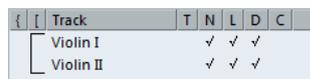
PROCEDURE

1. Open the Score Settings and select the Layout page.
In the track list, you can find columns for braces { and brackets [.
2. Click in one of the columns and drag downwards in the list to encompass the desired staves.

The column indicates graphically which staves are encompassed by the brace or bracket.



Click at the first staff for which you want a bracket or brace...



...and drag downwards in the list to enclose the desired staves.

3. Close the dialog.
The score is displayed with brackets or braces according to the settings you made.

- You can edit brackets and braces in the dialog by dragging the ends of the indicator in the list.
- To remove a bracket or brace, click its indicator in the list.

You can automatically get broken bar lines based on the brackets you have added.

If the “Show Braces in Edit Mode” option is activated in the Preferences dialog (Scores-Editing page), brackets and braces are shown in Edit Mode as well.

RELATED LINKS

[Breaking bar lines](#) on page 1202

Displaying the Chord Symbols from the Chord Track

You can display the chord symbols from the chord track. Chord symbols can be viewed, edited, and printed out in Page Mode.

PROCEDURE

1. To show the Chord Track symbols, open the Scores menu, and from the Advanced Layout submenu select “Show Chord Track”.
On the Layout page of the Score Settings dialog you can specify which staff should display the chord track.

2. To edit a chord symbol, double-click it.

NOTE

Moving chord symbols in the staff only affects the display. The position of the chords on the chord track remains unaffected.

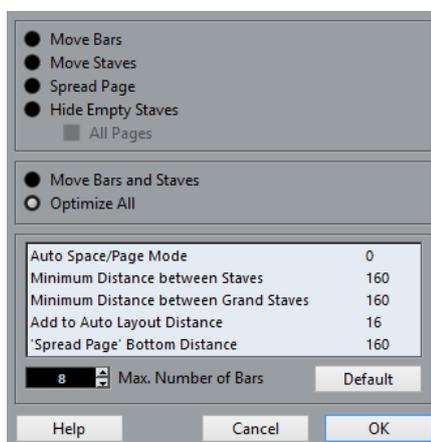
RELATED LINKS

[Layout settings](#) on page 1185

[Chord Functions](#) on page 789

Auto Layout

This item on the Scores menu brings up a dialog with several options. Activating one of these makes the program “go through” the score and make adjustments to measure widths, staff distances, etc. Exactly which parts and properties of the score are affected depends on which option you activate/deactivate.

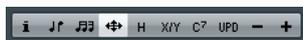


IMPORTANT

The automatic layout adjustments are done just as if you yourself had made them manually. This means that if there is something you do not like, you can always change it manually, as described above.

NOTE

You can also open the Auto Layout dialog by clicking the Auto Layout button on the extended toolbar.



Move Bars

This option looks at the active grand staff, and attempts to adjust the measure widths, so that all notes and symbols get as much room as possible. The number of bars on the staff is not affected.

- You can perform this function for several staves in one go, by dragging a selection rectangle over their left edges, and then selecting Move Bars.

Move Staves

This changes the measure width (as with Move Bars) but also the vertical staff distance, of the active staff and all following staves.

Spread Page

This corrects the vertical layout of the staves on the current page, so that they “fit onto the page”. In other words, this removes space at the bottom of the page.

Hide Empty Staves

This hides all empty staves, from the active staff to the end of the score. Note that polyphonic/split staves are in this case treated as one entity if the clef in the upper system differs from that in the lower system. That is, a piano staff is considered “empty” only if there are no notes on either staff.

- If you have activated the “Hidden” option on the filter bar, hidden staves are indicated by a marker with the text “Hide:Name” (where “Name” is the staff name).
To display hidden staves, delete their “Hide” markers.
- If you activate the “Auto Layout: Don’t hide first staff” option in the Preferences dialog (Scores–Editing page), staves in the very first grand staff are not hidden, even if they are empty.
This is useful for example if you are creating an orchestra score, and want to show the complete “layout” of the orchestra on the first page of the score, without hiding anything.

All Pages

Activate this if you want to apply the options above to all pages. Please note that this setting is applied to the active staff and onwards. If you want all pages in the score to be affected, you have to make the very first staff (the first staff on the first page) the active staff.

Move Bars and Staves

This is a combination of “Move Bars”, “Move Staves”, and “All Pages”, plus automatic calculation of the number of bars across the page – the function tries to optimize the number of bars across the page for each staff (with the maximum number of bars as set in the dialog).

Optimize All

All of the above in one fell swoop. This procedure might take some time but usually yields great results.

Other functions

In the lower part of the dialog, the following options are available:

Auto Space/Page Mode

The higher the value, the more space is allowed for each element in the score (and thus, the fewer the bars across the page).

Minimum Distance between Staves

When you use an Auto Layout function that moves staves (changes the vertical staff distance), this setting determines the minimum distance between the staves.

Minimum Distance between Grand Staves

This sets the minimum distance between Grand Staves in the same way.

Add to Auto Layout Distance

This number is added to the distance between staves that is added when you use any of the Auto Layout functions. The higher the number, the larger the distance between staves.

'Spread Page' Bottom Distance

This is added to the white space that appears on the bottom of a page when using the Spread Page functions.

Max. Number of Bars

This allows you to specify the maximum number of bars per staff when using the "Bars and Staves" or "Optimize All" functions.

NOTE

The functions "Move Bars" and "Move All Bars" ("Move Bars" + "All Pages") can also be accessed via the Staff context menu (opened by right-clicking the rectangle to the left of the active staff).

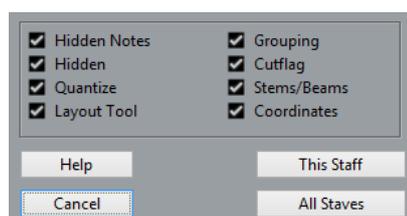
Reset Layout

This function allows you to delete invisible layout elements, which in effect restores the score to default settings.

PROCEDURE

1. Select "Reset Layout..." from the Scores menu.
The Reset Layout dialog appears.
 2. Activate the items you want to delete or reset to standard settings.
 3. Click "This Staff" to clean up the active staff only, or on "All Staves" to clean up all staves in the score.
-

Reset Layout Options



Hidden Notes

Makes all hidden notes permanently visible again.

Hidden

Makes all other hidden objects permanently visible again.

Quantize

Deletes all Display Quantize elements.

Layout Tool

Resets all positions of notes, clefs, slurs and ties altered using the Layout tool.

Grouping

Resets the grouping under beams to standard values.

Cutflag

Deletes all cutflag events.

Stems/Beams

Resets the length of all stems and reset the slant of beams that have been manually adjusted.

Coordinates

Removes all manual spacing of note symbols and slurs.

Breaking bar lines

Sometimes you may not want a bar line to stretch all the way across a grand staff. If this is the case, you have the possibility to “break it”.

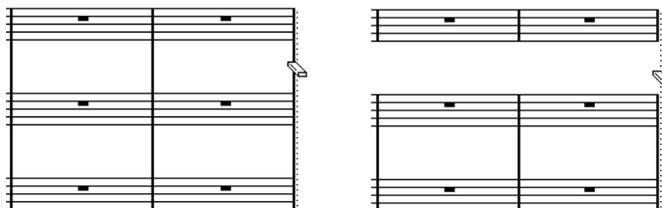
Manually

You can break the bar lines in one grand staff or in several grand staves and re-connect them.

Breaking bar lines in one grand staff

PROCEDURE

1. Select the Erase tool.
2. Click a bar line connecting the two staves.



Before and after splitting the bar lines between two staves.

All bar lines between these two staves (except the first and last) are broken. To break the first or last bar line in a grand staff, you need to click directly on these.

Breaking bar lines in several grand staves

If you hold down **Alt** and click a bar line as described above, the corresponding bar lines are broken in all following grand staves.

Re-connecting broken bar lines

If you have broken the bar lines, you can use the Glue tool to connect them again.

PROCEDURE

1. Select the Glue tool.

2. Click one of the bar lines in the staff above the broken bar lines.
All bar lines between these staves in this grand staff are connected.
To re-connect bar lines in several grand staves, hold down **Alt** and click with the Glue tool.
The bar lines between the corresponding staves are connected in all following grand staves.
-

Automatically

If you have added brackets for some staves on the Layout page of the Score Settings dialog, you can have bar lines broken between each bracketed “section”, giving a clearer indication of which staves belong together:

PROCEDURE

1. Open the Score Settings dialog from the Score menu and, on the Project page, select the “Notation Style” subpage.
 2. In the Bar Lines section, locate and activate the “Break Bar Lines with Brackets” option.
The option Break Last Brackets determines whether the breaking of bar lines should also apply to the bar line at the end of each row.
-

RELATED LINKS

[Adding brackets and braces](#) on page 1198

Scoring for drums

About this chapter

In this chapter you will learn:

- How to set up the drum map.
- How to set up a staff for drum notes.
- How to enter and edit drum notes.
- How to use a single line drum staff.

Background: Drum maps in the Score Editor

When scoring for drums, you can assign a unique note head to each pitch. There is even the possibility to set up different note heads for different note values!

However, to be able to fully use this function, you need to understand a bit about drum maps, and the use of these in the Score Editor.

About drum maps

Cubase handles drum editing by means of drum maps. In the Score Editor, the drum map displays different note heads for different pitches.

You access the drum map by selecting “Drum Map Setup” from the MIDI menu.

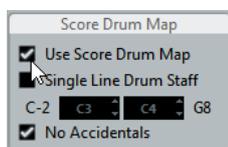
Pitch	Instrument	Quantize	M	I-Note	O-Note	Chan#	Output	Display	Head Sy	Voice
C1	Bass Drum	1/16		C1	C1	10	Track	F3	●	2
C#1	Side Stick	1/16		C#1	C#1	10	Track	C4	♯	2
D1	Acoustic Snare	1/16		D1	D1	10	Track	C4	●	2
D#1	Hand Clap	1/16		D#1	D#1	10	Track	C-2	●	1
E1	Electric Snare	1/16		E1	E1	10	Track	C4	●	2
F1	Low Floor Tom	1/16		F1	F1	10	Track	B3	♯	2
F#1	Closed Hi-Hat	1/16		F#1	F#1	10	Track	E4	X	1
G1	High Floor Tom	1/16		G1	G1	10	Track	D4	♯	2
G#1	Pedal Hi-Hat	1/16		G#1	G#1	10	Track	E4	X	1
A1	Low Tom	1/16		A1	A1	10	Track	C3	♯	2
A#1	Open Hi-Hat	1/16		A#1	A#1	10	Track	E4	♯	1
B1	Low Middle Tom	1/16		B1	B1	10	Track	G3	♯	2
C2	High Middle Tom	1/16		C2	C2	10	Track	A3	♯	2
C#2	Crash Cymbal 1	1/16		C#2	C#2	10	Track	G4	♯	1
D2	High Tom	1/16		D2	D2	10	Track	C4	♯	2
D#2	Ride Cymbal 1	1/16		D#2	D#2	10	Track	G4	X	1
E2	Chinese Cymbal	1/16		E2	E2	10	Track	G4	X	1
F2	Ride Bell	1/16		F2	F2	10	Track	G4	X	1
F#2	Tambourine	1/16		F#2	F#2	10	Track	C-2	●	1

RELATED LINKS

[MIDI Editors](#) on page 671

Use Score Drum Map on/off

For the drum map settings to be used in the score, you need to activate the “Use Score Drum Map” option in the Score Settings dialog on the Staff page (Options tab).



Setting up the drum map

To set up the drum map, proceed as follows:

PROCEDURE

1. Open the Score Editor for the drums track.
This should be a MIDI track to which you have assigned a drum map.
2. Open the Score Settings dialog and select the Staff page.
3. Select the Options tab and activate the “Use Score Drum Map” option.
4. On the MIDI menu, select “Drum Map Setup”.
The Drum Map Setup dialog appears.
5. Make settings for the sounds/MIDI notes you need.

IMPORTANT

Please note that many different drum maps can be created for a project. Which one you get depends on which drum map is assigned to the edited track. These drum maps are totally independent of one another, i. e. each pitch can have different settings in different drum maps.

Score related options

Pitch

This corresponds to the I-note of the sound in the drum map, and cannot be edited here.

Instrument

The name of the drum sound in the map.

Display Note

The display pitch, i. e. the pitch at which the note is shown in the score. For example, you typically want all three hi-hat sounds to be shown on the same system line in the score (but with different symbols). Therefore, you set these to the same display pitch.

Head Symbol

Clicking in this column opens a window in which you can select a note head symbol for the sound. If “Use Head Pairs” is activated in the dialog, you can select a note head pair instead.

Voice

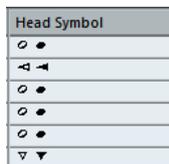
This allows you to make all notes with this pitch belong to a certain voice, so that they get a common rest handling and stem direction, for example.

Using note head pairs

Not only can you have different drum sounds displayed with different note heads, you can also display different note heads for different note values:

PROCEDURE

1. Activate the “Use Head Pairs” checkbox.
The “Head Symbol” column now shows two head symbols for each drum sound.



All head symbols are arranged in pairs – by default an “empty” head and a “filled” head. Just as with regular notes, the “empty” note heads are used with half notes and larger note values, and the “filled” heads are used with quarter notes and smaller note values.

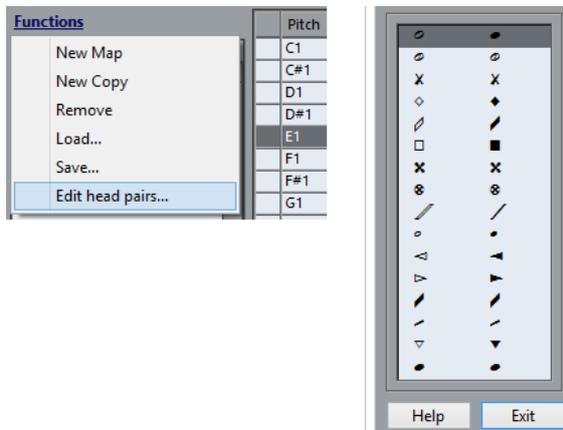
2. To select a head pair for a drum sound/note, click in the Head symbol column to open the pop-up menu and choose the new head pair.
-

Customizing note head pairs

If you do not like the default pairs of note heads, you can edit these:

PROCEDURE

1. On the Functions pop-up menu, select “Edit head pairs”.



2. To change a symbol in a pair, click on it and select a new symbol from the pop-up menu.
 3. When you are done, click Exit to close the dialog.
-

Editing the drum map in the score

If you activate the “Edit in Scores” option in the Drum Map Setup dialog, you can change the settings for the score drum map directly in the score:

- Transposing a note changes the display pitch of its drum sound – the actual note is not transposed.
- Double-clicking a note allows you to make note head settings for that drum sound.
- Using the “Move to Voice” function changes the voice assignment of the drum sound.

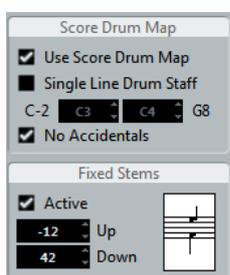
NOTE

This requires that you leave the Drum Map Setup dialog open – closing the dialog automatically deactivates this option, allowing you to perform normal editing.

Setting up a staff for drum scoring

PROCEDURE

1. Open the Score Settings dialog on the Staff page and select the Options tab.
2. Make sure that “Use Score Drum Map” is activated.
3. If you want a single line drum staff, activate the corresponding option.
4. If you want flat beams, activate the corresponding option.
5. If you want all stems to end at the same position, activate Fixed Stems and set a length for up/down stems.



You may also want to use polyphonic voices to handle rest and stem separately. However, you can still activate the “Fixed Stems” option if you like.

RELATED LINKS

- [Using “Single Line Drum Staff” on page 1207](#)
- [Polyphonic voicing on page 1221](#)
- [Handling beaming on page 1110](#)

Entering and editing notes

This is like entering notes on a normal note system. However, Notes are edited using their display pitch when the drum map is used. This means that when you move a note vertically, you move it to another display pitch. What actual pitch it gets depends on which pitch uses the display pitch you now “dropped it on”.

NOTE

If the drum map contains two notes with the same pitch (for example open and closed hi-hat), you can get the second note by holding **Ctrl/Cmd**.

Using “Single Line Drum Staff”

If this option is activated on the Options tab of the Staff page in the Score Settings dialog, there is only one line in the system. Furthermore, notes can only appear below the line, on the line and above the line.

To decide which notes go where, proceed as follows:

PROCEDURE

1. Open the Score Settings dialog on the Staff page and select the Options tab.
2. Activate "Use Score Drum Map" and "Single Line Drum Staff".
3. Set up the two pitch values to decide which pitches go on the line.
Notes below this range automatically wind up below the line and notes above wind up above the line.

IMPORTANT

When you enter and edit the pitch of notes on a single line drum staff, the best way is to drag the note up or down while watching the Mouse Note Position display in the status line.

Creating tablature

About this chapter

In this chapter you will learn:

- How to create tablature, automatically and manually.
- How to control the appearance of the tablature notes.
- How to edit tablature.

Cubase is able to produce score in tablature format. This can be done automatically, by “converting” recorded MIDI information. You can also create a tablature staff from scratch and enter the notes “by hand”.

IMPORTANT

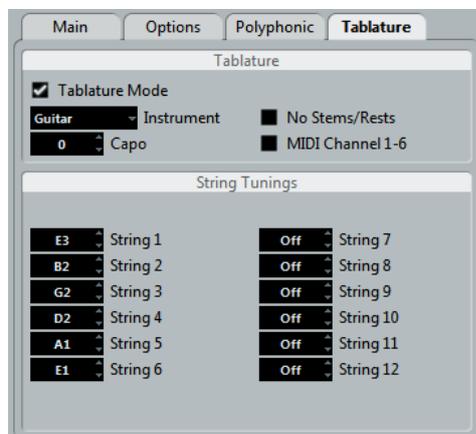
Even though we use the term “converting” in this chapter, please note that tablature is a mode. You can switch between regular notation and tablature at any time.

Creating tablature automatically

This assumes you have a regular score on screen already. We also suggest you perform basic editing like quantizing to make the score as legible as possible as regular notes before converting into tablature.

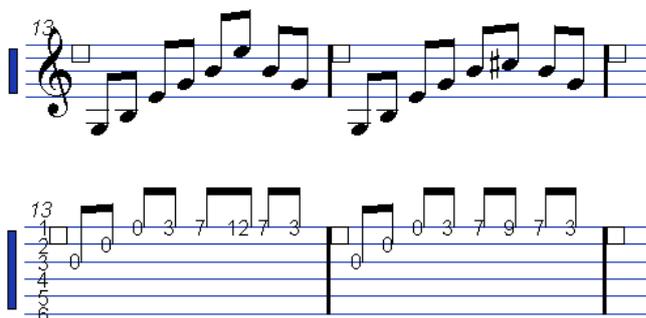
PROCEDURE

1. Make sure that the notes in the score are inside the range of the instrument. Notes with a pitch lower than the open tuning of the lowest string cannot be converted.
2. Open the Score Settings dialog on the Staff page and select the Tablature tab.



3. Activate “Tablature Mode”.

4. Select one of the predefined instruments from the pop-up menu.
 - If you are not using one of the predefined instruments, set the open tuning of each string using the value fields.
You can create tablature for up to 12 strings. To disable a string, set it to Off, the lowest value.
5. If you want to use a capodaster, e. g. on the forth fret, enter the corresponding value in the Capo field.
The tablature changes accordingly.
6. Make the desired settings for "No Stems/Rests" and "MIDI Channel 1-6".
No Stems/Rests gives you a score where the notes have no stems and where all the rests are hidden. The "MIDI Channel 1-6" feature is described below.
7. Click Apply.
The tablature appears. You get as many note lines as you have activated strings. All the notes now have a fret number instead of their regular note heads.



Before and after activating tablature mode.

8. Edit the score, if needed.
You can make Display Quantize settings, add symbols, etc. as usual. However, editing the actual notes is a bit different from regular note editing, see below.
-

Using "MIDI Channel 1-6"

This feature makes notes automatically appear on the correct string according to their MIDI channel value.

Normally, the program automatically decides on which string to display a note, by looking at the pitch and then putting the note at the lowest possible string. You can then either manually move a note to the correct string, or use the "MIDI Channel 1-6" option to let the program move the notes automatically.

PROCEDURE

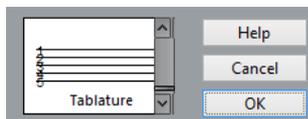
1. Many guitar synthesizers are able to transmit each string on a different MIDI channel. If you have such an instrument, set it up so that the high E string transmits on MIDI channel 1, the B string transmits on MIDI channel 2, etc.
This feature can be used for MIDI string instruments with up to six strings.
 2. Record the project. Quantize and edit it as desired.
 3. Make sure that the "MIDI Channel 1-6" option is activated and convert the notes into tablature, as described above.
 4. The notes are automatically placed on the right strings.
For example if you played a "B" on the low E-string, it appears as a "7" on that string, not as a "2" on the A-string.
-

Creating tablature manually

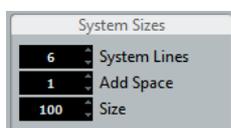
To set up an empty system for inputting tablature, proceed as follows:

PROCEDURE

1. Double-click on the clef symbol in the score to open the Edit Clef dialog.
2. Change the clef to the tablature symbol.

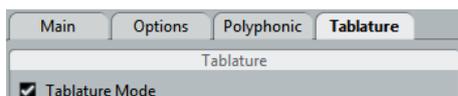


3. Open the Score Settings dialog on the Staff page and select the Options tab.
4. Set the "System Lines" to as many strings as the instrument you are scoring for has.
5. Raise the Add Space value to 1 or 2.
You need a little extra space between note lines to make room for the numbered note heads.

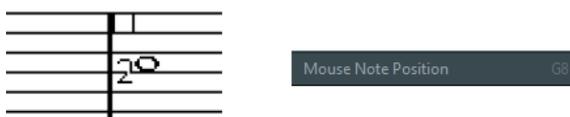


Suggested system line settings for guitar tablature

6. On the Tablature tab, activate "Tablature Mode".



7. Set up whatever other parameters you need in the dialog, and click Apply.
8. Select the Insert Note tool and move the pointer over the score.
9. Press the mouse button and drag up and down until the note appears on the desired string with the correct fret number (you can also verify the pitch on the toolbar, as usual).
When you drag up and down, the program automatically selects the lowest possible string. If you want a fret number higher than 4 on a guitar tablature, for example, you have to use "Move To String", see below.



Setting the correct pitch. Use the Mouse Note Position display in the status line as an additional guide.

10. Release the mouse button.
The note is displayed.

Tablature number appearance

In the Score Settings dialog on the Project-Font Settings subpage, you can find settings for the tablature numbers. In the “Font For” pop-up menu, select “Tablatures” and then select the desired font, size, and style for the number note heads.

Editing

Tablature can be edited like any other score. You can move notes, handle beaming, stem direction, etc.

Moving notes to another string

If you want for example a “C” to appear as an “8” on the low E-string rather than a “3” on the A-string on a guitar, proceed as follows:

PROCEDURE

1. Select one note or a number of notes that you want to move to a new string.
2. Right-click on one of the selected notes and, from the “Move to String” submenu, select the desired string.

The Fret number is automatically adjusted according to the tuning of the instrument (as set up on the Tablature tab of the Staff page in the Score Settings dialog).

Moving notes

Moving notes in pitch in a tablature score is working the same way as entering notes manually, see above.

Editing on the info line

You can change the pitch of notes on the info line as usual. The string and fret number are updated automatically in the score.

Note head shape

If you only want to enter a fret number for your notes (Tablature mode off), you can use the Set Note Info dialog on regular notes.

PROCEDURE

1. Double-click on the head of a note.
The Set Note Info dialog appears.
2. Activate the Tablature option and set a fret number in the value field to the right.



3. Click Apply.
-

Rhythmic Notation

In Cubase you can display your score in rhythmic notation. This is useful if you want to focus on rhythmic information only. Rhythmic notation can also help you to create lead sheets.

You can display your full score or selections of it in rhythmic notation. The smallest possible selection that you can show in rhythmic notation is a bar. Even if you only select one note, the display for the whole bar changes.



In split systems you can display one staff in regular notation and the other one in rhythmic notation.



If you work with polyphonic voices, you can display one voice in regular notation and the other one in rhythmic notation.



IMPORTANT

Rhythmic notation is a display function and therefore non-destructive. You can switch between regular notation and rhythmic notation at any time.

RELATED LINKS

[Moving notes between voices](#) on page 1094

About this Chapter

In this chapter you will learn:

- How to show rhythmic notation in your score.
- How to change the appearance and style of rhythmic notation.

RELATED LINKS

[Showing Rhythmic Notation](#) on page 1214
[Notation Style](#) on page 1216

Showing Rhythmic Notation

You can show regular notation as rhythmic notation.

PREREQUISITE

You have opened your score in Cubase and you have performed basic editing to make the score as legible as possible.

PROCEDURE

1. Select the notes that you want to display as rhythmic notation.
2. Select **Scores > Rhythmic Notation > Show Rhythmic Notation**.

RESULT

The selected notation is displayed in rhythmic notation:

- Note heads change shape.
- Pitches are suspended so that all rhythm note heads are shown at the same vertical position.
- Chords are suspended and represented by a single note head.
- Ties between rhythm notation and regular notation bars are suspended.
- Bars that do not contain notes are filled with as many slashes as correspond to the numerator of the time signature.

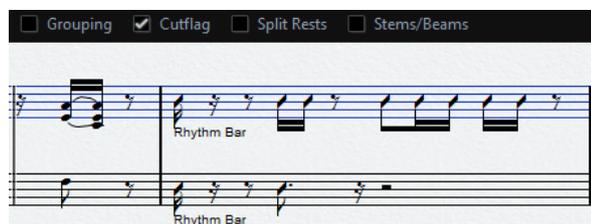
RELATED LINKS

[Notation Style](#) on page 1216
[Showing Regular Notation](#) on page 1215

Rhythm Bar Indicators

Rhythm bar indicators display markers in the score where rhythmic notation is shown instead of regular notation.

You can show rhythm bar indicators in your score by activating the **Cut/Rhythm** option in the **Filter** bar in the **Score Editor**.



To hide rhythm bar indicators, deactivate the **Cut/Rhythm** option.

NOTE

Rhythm bar indicators are not printed.

RELATED LINKS

[Showing Rhythmic Notation](#) on page 1214

Showing Regular Notation

You can suspend rhythmic notation and show the regular notation again.

PREREQUISITE

Parts of your score are shown in rhythmic notation.

PROCEDURE

1. Select the notes that you want to display as regular notation.
2. Select **Scores > Rhythmic Notation > Show Regular Notation.**

RESULT

The selected notation is displayed as regular notation.

- Rhythm note heads are shown as regular note heads.
- Note pitches, chords and ties are shown.
- Bars that are filled with slashes are shown with rests.

RELATED LINKS

[Showing Rhythmic Notation](#) on page 1214

Clearing Bars

You can clear one or more bars so that notes and rests are hidden. This allows you to focus on specific parts of your score, without deleting these bars that you do not want to show.

PROCEDURE

1. Select one or more notes of the bar that you clear.
2. Select **Scores > Rhythmic Notation > Clear Bar.**

RESULT

All notes and rests are hidden from the bar. The bar itself is still displayed.

NOTE

Clearing bars is a display option that does not affect playback. All notes and rests are played back as usual.

AFTER COMPLETING THIS TASK

To recover your regular or rhythmic notation, select the bar by clicking the rhythm bar indicator and show rhythmic or regular notation as usual.

RELATED LINKS

[Rhythm Bar Indicators](#) on page 1214

[Showing Rhythmic Notation](#) on page 1214

[Showing Regular Notation](#) on page 1215

Showing Repeat Bar Signs

You can show a repeat bar sign that replaces the regular or the rhythmic notation in one or more bars.

PROCEDURE

1. Select one or more notes.
2. Select **Scores > Rhythmic Notation > Show Bar Repeat Sign**.

RESULT

All notes and rests are hidden from that bar and a repeat bar sign is shown instead.

NOTE

Showing a repeat bar sign is a display option that does not affect playback. All notes and rests are played back as usual.

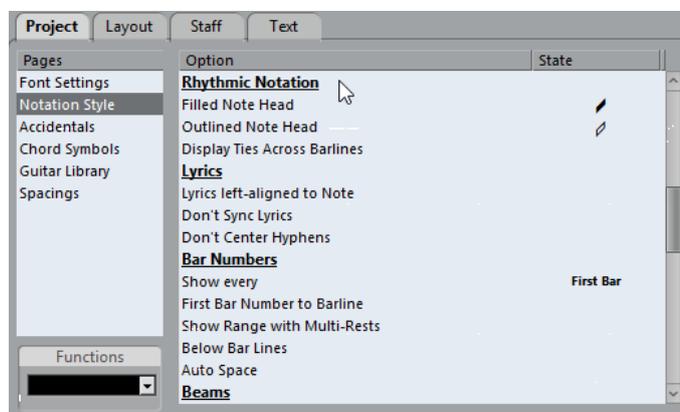
AFTER COMPLETING THIS TASK

To show the regular or the rhythmic notation again, right-click the bar repeat sign and select **Show Regular Notation** or **Show Rhythmic Notation**.

Notation Style

The **Notation Style** page in the **Score Settings** dialog contains options that allow you to change the appearance of the rhythmic notation.

- To open the **Rhythmic Notation** options, select **Scores > Settings** and in the **Pages** list to the left, select **Notation Style**.



Filled Note Head

Allows you to select a note head for quarter notes, eighth notes, sixteenth notes, etc.

Outlined Note Head

Allows you to select a note head for whole notes and half notes.

Display Ties Across Barlines

If you activate this option, notes that are tied across barlines in regular notation are shown with a tie symbol in rhythmic notation.

The score and MIDI playback

About this chapter

In this chapter you will learn:

- How to use the Arranger mode to have the playback follow the structure of the score.
- How to use the “mapped” Dynamics symbols.

NOTE

Cubase Pro only: You can also play back articulations in the Score using the Expression Map and Note Expression functions.

RELATED LINKS

[Expression maps \(Cubase Pro only\)](#) on page 760
[Note Expression](#) on page 772

Scores and the Arranger mode

Repeats (bar lines) appear in all layouts, as well as Project symbols like Segnos, Codas, Da Capo, endings, etc. To have the playback in Cubase follow these directions, proceed as follows:

PROCEDURE

1. Add the desired repeats and project symbols to the score.
2. Right-click the toolbar in the Score Editor and make sure that “Arranger” is ticked. This adds the Arranger buttons to the toolbar.



3. Click the “Activate Arranger Mode” button on the toolbar and start playback. Playback follows the repeats and Project symbols in the score – sections within repeat symbols are repeated, the playback position jumps to the beginning when encountering a Da Capo symbol, and so on.

Working with mapped dynamics

Apart from the dynamics symbols found in the Dynamics section, you can also use 12 “mapped” Dynamics symbols. These make use of the Note Expression functionality in Cubase. Mapped Dynamics symbols can be played back using three different methods: by modifying the velocity values in percentages, by sending volume controller messages or by sending additional generic controllers. These methods can also be combined.

RELATED LINKS

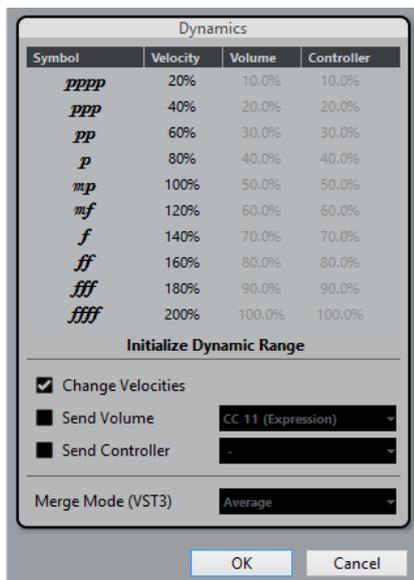
[Note Expression](#) on page 772

Setting up the symbols

You can make settings for the symbols in the Dynamics Mapping Setup dialog. On the left in the upper section, the available symbols are listed.

- To open the dialog, right-click on one of the symbols in the Dynamics Mapping section in the Symbols Inspector and select “Dynamics Mapping...”.

When mapped dynamics symbols have been added to the score, you can also double-click on a symbol to open the dialog.



In the dialog, you can make the following settings:

Change Velocities

You can create dynamics by defining different velocities for the different symbols.

PROCEDURE

1. Activate the “Change Velocities” checkbox in the lower section of the dialog.
 2. Set up a percentage value (positive or negative) in the Velocity column to specify by how much the corresponding symbol will raise or reduce the current velocity value of a note.
-

Send Volume

You also have the possibility to define the dynamics by sending Volume controller values.

PROCEDURE

1. Activate “Send Volume” in the lower section of the dialog, and select whether you want to use the MIDI controllers 7 or 11 or the VST 3 parameter Volume (if the instrument you are using is compatible with VST 3).
2. Set up a percentage value (positive or negative) in the Volume column to specify by how much the corresponding symbol will raise or reduce the current volume of a note.

NOTE

If “Send Volume” is activated and set to VST 3 Volume, the VST 3 volume events in the notes are being merged with the volume specified for the Dynamics symbols, according to the Merge Mode setting, see below. However, make sure that the edited part does not

contain events for MIDI controller 7 (Main Volume) or 11 (Expression) on the controller lane.

The Merge modes

When you use the parameter VST 3 Volume in the notes and for the dynamics symbols, the result depends on the Merge Mode. The following modes are available:

Average

When this is selected, the average of the two volume messages will be used for the notes.

Merge

When this is selected, the VST 3 Volume setting for the Dynamics symbols modulates the existing VST 3 Volume setting of the notes. Higher settings increase the volume and low settings decrease the volume set for the note.

Send Controller

You can also send an additional MIDI controller (except MIDI controllers 7 and 11, which are used for the “Send Volume” function).

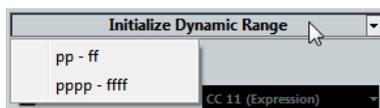
If you combine this with the “Send Volume” function, you can set up a sound which gets brighter as it gets louder, which is useful when working with strings or woodwind and brass instruments.

PROCEDURE

1. Activate “Send Controller” and specify the controller you want to use in the pop-up menu. You can select any of the available MIDI controllers, but also VST 3 parameters (except Volume, Pan, and Pitch).
 2. Set up a percentage value (positive or negative) in the Controller column to specify by how much the corresponding symbol will raise or reduce the controller value of a note.
-

Initializing the Dynamic Range

You can specify the dynamic range for the work with mapped dynamics symbols using the pop-up menu in the middle section of the dialog.



If you select “pp-ff”, the extreme Dynamics symbols (pppp, ppp, ffff, and fff) do not have an effect. If you select “pppp-ffff”, the whole dynamic range will be used.

Using dynamics symbols in the Score Editor

Once you have set up the dynamics as desired, you can use the symbols in the Score Editor.

Inserting dynamics symbols

When you insert dynamics symbols, note the following:

- Select the desired symbol in the Inspector section and click at the position in the Score Editor at which you want to insert the symbol.

Note that the “mapped” dynamics symbols have a different color scheme than the regular dynamics symbols.

- Crescendi and Decrescendi are updated intelligently, i. e. when you have inserted a crescendo between two dynamics symbols and the order of these symbols is reversed, the decrescendo automatically becomes a crescendo.
- When you insert a crescendo symbol which is not preceded by a Dynamic symbol, the “assumed” start value is mezzo forte (mf).
- Likewise, if a crescendo symbol is not followed by a dynamic symbol, an end value will be calculated automatically.

For a crescendo, this is one value above the start value, and for a decrescendo one value below the start value.

Modifying/Editing dynamics symbols

You can change the settings for the dynamics symbols at any time in the Dynamics Mapping Setup dialog, as described above.

- You can step between the available dynamics symbols by using the commands “One up” and “One down” on the context menu, by using the corresponding key commands, or by clicking the “+” and “-” buttons on the toolbar.

When several dynamics symbols are selected, they will all be modified accordingly.

Tips and Tricks

Overview

This chapter provides useful information about editing techniques and answers to a number of questions that might arise when you use the Score Editor. For more information about the functions referred to, please use the index and check the previous chapters.

Useful editing techniques

Use this section to find out more about some editing techniques that help you to use the score functions more efficiently.

Moving a note without transposing it

If you hold down **Ctrl/Cmd** while moving a note (or several notes), only horizontal movements are possible, so that you do not have to worry about the notes being transposed. You can also set up a key command for this. This is done in the Key Commands dialog (Nudge category).

Moving and spacing several staves

If you have a number of staves that you want displayed with an equal distance (for example, all strings of a grand staff in a full orchestra score), this can be done using the Position Info window:

PROCEDURE

1. Open the Preferences (Scores–Editing page) and deactivate the “Global staff Spacing with **Alt-Ctrl/Cmd**” option.
2. In the score, select the staves you want to set to an equal distance.
3. Open the Position Info window by clicking on the ruler.
4. Use the To Previous Staff or To Next Staff settings to specify the desired distance between the staves.

All selected staves are spaced according to your settings.

If you do this when the “Global staff Spacing with **Alt-Ctrl/Cmd**” option is activated, all staves in the score are affected.

Polyphonic voicing

If you are working on a full score with more than one instrument in one staff (2 flutes, 2 trumpets, etc.), you should use polyphonic voices. And even if both instruments play the same notes, you should insert notes for both instruments (you can mute the notes of the second voice if playback is an issue). If you do this, it is much easier to extract single parts later by using the “Extract Voices” command.

Using the bar handles

Double-clicking a bar handle opens the Bar Copy dialog. This function is great for copying accents, but you can also use it for copying drum phrases, etc.

- If you hold down **Shift** and double-click on a bar handle, this and the next bar are selected. This is handy when copying phrases of two or more bars in one go.

RELATED LINKS

[Moving and duplicating with the bar handles](#) on page 1143

Copying a section with “invisibles”

If you want to copy and paste a section which contains hidden elements, adjusted beams and stems, etc., there are two ways to proceed:

- Use the filter bar to make indicators appear in the score. Then select these indicators together with the notes before you copy. This ensures the notes are copied with their formatting, etc.
- Double-click the bar handle of one of the bars, and make sure all relevant event types are activated in the dialog. Then select the bars you want to copy by clicking their bar handles, and copy them by **Alt**-dragging the bar handles.

RELATED LINKS

[Moving and duplicating with the bar handles](#) on page 1143

Using “Scores Notes To MIDI”

This function converts the score data, as displayed, into MIDI data. Let's say for example that you have set up the score so that it is displayed to 99 % the way you want it to be. Yet, that last 1 % forces you to deactivate some of the Staff Settings (like Clean Lengths, No Overlap, or Auto Quantize), which makes other parts of the score illegible. In this case, try using the “Scores Notes To MIDI” function. Note that you should work on a copy of the track!

RELATED LINKS

[Using "Scores Notes To MIDI" on page 1059](#)

Optimizing rests

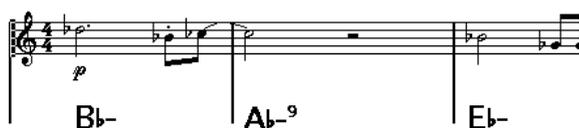
If you have a number of consecutive empty bars, you can replace them with one multiple rest.

RELATED LINKS

[Multi-Rests](#) on page 1186

Zero system lines

Having no system lines at all might seem like a stupid idea to start with. But this option allows you to create chord sheets really quickly.



A lead sheet created by specifying “0” system lines

RELATED LINKS

[Using Make Chord Symbols](#) on page 1158

Examples and scales

If you are creating scale examples and similar, you can use the Real Book option and manually hide all symbols at the beginning of the first staff to make the score appear like separate unconnected “lines”.

Remember you can also hide the bar lines.



An example scale without bar lines.

Controlling the order and appearance of grace notes

Normally, grace notes are beamed. Their order under the beam is controlled by their order in the track. It is enough to put a grace note one tick before the next grace note to make them appear in the desired order under the beam.

Initially the grace notes are put in with a 32nd note beam. By double-clicking the note and changing the “flag” type in the Set Note Info dialog, you can change this.



Complex grace notes

Speeding up inserting key changes

If you have a grand staff with many instruments, inserting key changes one by one can take a lot of time.

In this case, activate “Key Changes for the entire Project” on the Key context menu or in the Score Settings dialog, on the Project–Notation Style subpage (Keys category). This way, all changes made to the key always affect the entire project.

Speeding up inserting staccato and accents

Symbols linked to notes can also be put in for a number of notes at the same time, even on different staves.

RELATED LINKS

[Adding a symbol to several notes using the Draw tool](#) on page 1130

Setting the distance between staves in a piano score

Drag the first bass staff on the first page. This copies the spacing to all staves. Please note that this can only be done in Page Mode.

Frequently asked questions

In this section, you can find some answers to questions concerning adding and editing of notes as well as the handling of symbols and layouts.

I enter a note with one value and it is shown as a note with another value.

Set the Rests value for Display Quantize to a smaller note value. Try deactivating Auto Quantize, especially if you do not have any triplets or triplets only.

Notes are not displayed at the correct positions.

Try changing the Notes value for Display Quantize.

There are a number of short rests after my notes.

Your Rests value for Display Quantize might be set to too small a note value. Raise it. Also check the "Clean Lengths" setting.

When I change the length of a note, nothing happens.

This is because the Display Quantize value puts a restriction on what note values can be displayed. Check that Display Quantize is set to the smallest note value you have in your project.

I have adjusted Display Quantize and the other staff settings best I can. The notes are still shown with the wrong values.

You might need to use one of these three features: inserting Display Quantize events, using polyphonic voicing, or applying "Scores Notes To MIDI".

In the Score Settings dialog, I change the Display Quantize settings on the Staff page (Main subpage) and nothing happens.

Did you remember to click Apply? Maybe you have already inserted Display Quantize events in the score? These override the staff settings.

Suddenly many Display Quantize events appear in the score.

This is not a malfunction. If you had Auto Quantize on and start inserting Display Quantize events, the auto quantizing is automatically transformed into Display Quantize events.

One long note is shown as many tied notes.

Do other notes occur at the same positions but with different lengths? Then you need to use polyphonic voicing. Are the note(s) syncopated? Then you should try the syncopation feature.

Even though I've tried the above, notes are not tied as I want them.

The way notes are tied in Cubase follows basic notation rules. You may need to make exceptions to these rules, by using the Cut Notes tool.

I have an unnecessarily large amount of rests.

Especially with polyphonic voicing, superfluous rests may be created. Try deactivating rests for one or more voices. You might also leave the rests activated in the Score Settings dialog on the Staff page (Polyphonic tab) and then hide the rests you do not need, one by one.

When using polyphonic voices, a number of rests are drawn on top of each other.

As above, you should try hiding rests in the Score Settings dialog on the Staff page (Polyphonic tab), center rests and possibly manually moving or hiding rests.

In polyphonic voices, notes that are on the same musical position are not displayed exactly vertically above each other.

This is not a malfunction. Cubase has built-in automatic algorithms for making the score as legible as possible. Sometimes this includes adjustments of the “graphic” position of notes, especially with small intervals like seconds. You can always move the notes using the Layout tool.

When using polyphonic voices, notes with small intervals “collide”.

As described above, Cubase tries to avoid this, but only for voices 1 and 2 in the upper staff and voices 5 and 6 in the lower. For other voices, please use the Layout tool to manually move the notes.

When I select a note, nothing is shown on the info line.

The note is probably tied to another note. This means that the second note does not really exist, it is just a graphic indication that the main note is long. Try selecting the main note instead.

Symbols from the Layout Symbols section are sometimes invisible when I open the score.

This is not a malfunction. Those symbols are part of a layout. If you open the score with another layout, for example because you open another combination of tracks, you can see another layout which might not contain any Symbols at all.

RELATED LINKS

[Working with layouts](#) on page 1176

I can't select an object on the screen, or I can't select an object without selecting another object.

Drag a selection rectangle around the objects. Then hold down **Shift** and deselect all the objects you do not want included, by clicking on them. You should also check out the lock layer function.

Symbols have disappeared.

Are they layout symbols? Then maybe they belong to another layout than the one you are editing now.

If that is not the reason, maybe you have inserted the symbol into the wrong staff.

RELATED LINKS

[Important! – Symbols, staves, and voices](#) on page 1128

A symbol doesn't move with its staff. Auto Layout produces far too wide spacing.

Maybe you have inserted the symbol into the wrong staff.

RELATED LINKS

[Important! – Symbols, staves, and voices](#) on page 1128

A note symbol appears too far from the note I wanted it inserted on.

Do you have activated the correct voice? Note symbols are inserted into voices, just like notes.

The note I recorded is displayed with the wrong length. For example, I recorded a sixteenth and got a quarter note.

You probably have the wrong Display Quantize value set. Open the Score Settings dialog and select the Staff page. If Auto Quantize is activated, deactivate it, unless you have mixed triplets and regular notes. Also check the Notes and Rests Display Quantize values. If the settings are too "coarse", change them to a smaller note value. If you for example need the program to display an eighth note rest, Rests Display Quantize must be set to "8" or a smaller value. If No Overlap is activated, you might want to turn it off.

RELATED LINKS

[How the Score Editor works](#) on page 1030

There is a pause after a note that I don't want.

You probably added a note with the wrong note value. Either lengthen the note (physically or graphically) or delete the one you have and add a new one with the correct note value. If this problem occurs a lot in your score, try selecting a larger Rests Display Quantize value.

RELATED LINKS

[Changing the length of notes](#) on page 1073

[Deleting notes](#) on page 1079

[Using Rests as Display Quantize setting](#) on page 1032

There is no pause after the note although there should be one.

Either the note is too long (use Clean Lengths or change the current note's length), or Rests Display Quantize is set to too high a value. Open the Score Settings, select the Staff page and lower the value.

The note has an accidental when it shouldn't, or it doesn't when it should.

Maybe the note is simply of the wrong pitch? Click on it (using the Object Selection tool) and look at the info line. Move it to the correct pitch. If this is not the reason, maybe you have the wrong key set? And finally, you can also use enharmonic shifting.

RELATED LINKS

[The info line](#) on page 1041

[Editing pitches of individual notes](#) on page 1072

[Accidentals and enharmonic shift](#) on page 1104

Notes are not grouped under beams the way I want it.

Normally the program groups eighth notes, sixteenths, etc. under beams. This can be deactivated. There is also detailed control of which notes are grouped under a beam.

RELATED LINKS

[Handling beaming](#) on page 1110

If you wish you had a faster computer

Here are some tips for those who find some operations slower than they would like:

- Work on a smaller section of the score at a time. Break the project up into parts and work on those parts individually until the final layout stage.
- Switch on multi-rests as late as possible.
- When working in Edit Mode, set Default Bars Across The Staff to a small value, for example 2.
- In Edit Mode, resize the window so that only one grand staff at a time is visible.
- Consider upgrading your computer hardware.

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