Operation Manual

CUBASE ARTIST 13

steinberg

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New Features

The following list informs you about the most important improvements in Cubase and provides links to the corresponding descriptions.

New Features in Version 13.0.20

More New Features

Tap Tempo Mode

- You can now set up a **Tap Tempo Mode** that defines where new tempo events are added when you insert tempo changes by tapping. See Tap Tempo Modes.

New Features in Version 13.0.0

Highlights

VocalChain

- **VocalChain** is a plug-in dedicated to modern vocal processing, containing various modules for different aspects, such as cleaning, adding more character, and typical vocal effects. The plug-in is described in the separate document **Plug-in Reference**. See Vocal Chain.

New Channel Tab

- A new **Channel** tab in the **Project** window gives you direct access to your mix, without leaving the arrangement. The new design allows you to intuitively find what you need and allows you to mix on the go, in a compact, per channel view. See Channel Tab.
- All audio-related and MIDI-related tracks are assigned to a particular channel that can be displayed on the **Channel** tab. See Tracks and Channels.

Range Editing in MIDI Editors

- The **Range Selection** tool is now also available in the **Key Editor** and the **Drum Editor**. See Range Editing in the Project Window and in the Editors.

MixConsole Overhaul

- The **MixConsole** got a fresh overhaul that allows you to focus on your mix. See MixConsole Window.

Chord Pads Improvements

- The redesigned chord pads enable you to easily find creative chord progressions. New presets give you excellent starting points, and enhanced functions make it even easier to create unique music. See Chord Pads Zone.

More New Features

Vocoder

- The **Vocoder** plug-in brings back a classic effect that allows you to apply sound characteristics taken from one signal to another. You can use this, for example, to use a voice as a modulator and an instrument as the carrier, making the instrument "talk". The plug-in is described in the separate document **Plug-in Reference**. See Vocoder.

VoxComp

- **VoxComp** is a compressor plug-in designed for processing vocals. It uses a highly adaptive algorithm, which makes it easy to achieve the desired results. The plug-in is described in the separate document **Plug-in Reference**. See VoxComp.

Switching Tracks between Mono and Stereo

- You can now switch the channel configuration between mono and stereo for audio, group channel, and FX channel tracks in your project. See Channel Configurations.

Track Versions for Video Tracks

- You can now create track versions of video files on video tracks. This makes working with new video edits more convenient. See Track Versions.

Rename Selected Events

- You can now quickly rename multiple selected events in your project at the same time. See Renaming Events.

Playback Start Modes

- The new start modes for playback allow you to choose whether to start playback from the current position, from a selection, or the locator range. See Transport Menu.

Marker Track Improvements

- When adding position or cycle markers to a marker track, you can now instantly rename them. See Adding and Editing Markers on the Marker Track.

Sampler Control Improvements

- The new **AudioWarp** playback modes **Spectral**, **Spectral HD**, and **Spectral Vocal** use a spectral resynthesis algorithm and allow for extreme stretch factors, down to 0%. See Playback Section.
- The envelope editor has been redesigned, and several new editing functions are available. The new **Shaper** envelope mode has been added. With the new **Edit** tool, you can now edit multiple selected envelope nodes much more conveniently than in previous versions. See Envelope Editors.
- **Sampler Control** now offers its own 20-step edit history, allowing you to undo/redo your most recent parameter changes or edit steps. See Sampler Control History.

Step Input Improvements

- The **MIDI Input** feature has been improved. See Editing Note Events via MIDI Input.
- The step input feature allows you to modify note lengths on the fly, and add voices on top. See Inserting Note Events via Step Input.

Tap Tempo Improvements

- The workflow for setting up tempo changes by tapping in Cubase has been improved. See Setting up Tempo Changes by Tapping.
- The new **Tap** tempo feature on the **Transport** panel and on the **Transport Bar** bar allows you to easily adjust the project tempo. See Setting the Project Tempo by Tapping.

Key Command Handling Improvements

- The new **Key Commands** dialog makes managing your shortcuts quick and easy. Find commands with the dynamic filter, and try new macros on the fly. See Key Commands Dialog.

Last but Not Least

MIDI Effects Overhaul

- The included MIDI effects come with a complete overhaul of the user interface. The MIDI effects are described in the separate document **Plug-in Reference**. See MIDI Effects.

HALion Sonic 7

- Cubase comes with **HALion Sonic 7**. This VST instrument is described in the separate document **HALion Sonic 7 Operation Manual**. See HALion Sonic 7.

SpectraLayers One 10

- Cubase comes with the latest version of **SpectraLayers One**. This powerful tool for spectral editing is described in the separate document **SpectraLayers One Operation Manual**. See SpectraLayers One 10.

Improved Multi Window Handling (Windows only)

- On Windows, Cubase comes with improved window handling, with at least one window open on your desktop. Most windows now offer a dedicated menu, reduced to the features and settings that are useful in the respective context. See Menus in Cubase.

Zooming Improvements

- You can use the mouse wheel to zoom horizontally and vertically within the event display. See Zooming in the Project Window.

Add Track Improvements

- When you add instrument tracks via the **Add Track** dialog, you can now configure the MIDI inputs. See Add Track Dialog – Instrument.
- When you add sampler tracks via the **Add Track** dialog, you can now configure the MIDI inputs and the audio outputs. See Add Track Dialog – Sampler.
- When you add MIDI tracks via the **Add Track** dialog, you can now configure the MIDI inputs, the MIDI outputs, and the MIDI channel. See Add Track Dialog – MIDI.
- When you add a MIDI track by double-clicking, it now adapts the input bus, the output bus, and the channel of the MIDI track that is selected in the track list. See Adding Tracks via Double-Click.

Range to Hitpoint Commands

- Working with the **Range Selection** tool has been extended to support navigation via hitpoints. See Creating Selection Ranges.

Introduction

This is the **Operation Manual** for Steinberg's Cubase. Here you will find detailed information about all the features and functions in the application.

The screenshots are taken from Cubase Pro.

Platform-Independent Documentation

The documentation applies to the operating systems Windows and macOS.

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 macOS.

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 macOS.

PDF Documents and Online Documentation

The documentation consists of several documents. You can read them online or download them from steinberg.help.

You can reach steinberg.help from the program by selecting **Help** > **Cubase Help**.

Operation Manual

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

Plug-in Reference

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

Remote Control Devices

Lists the supported MIDI remote control devices.

MIDI Devices

Describes how to manage MIDI devices and device panels.

Groove Agent SE

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

HALion Sonic

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

Retrologue

Describes the features and parameters of the included VST instrument Retrologue.

Padshop

Describes the features and parameters of the included VST instrument Padshop.

Verve

Describes the features and parameters of the included VST instrument Verve.

Steinberg Library Manager

Describes how you can register and manage your VST Sound libraries.

Documentation Structure

In our documentation, we divide information into three different types of topics, according to their content.

Descriptions of the User Interface

Topics that describe the functionality of user interface items and list the options and settings of dialogs, panels, or other items.

Descriptions of Basic Concepts

Topics that describe concepts and explain the functionality of a specific software feature.

Descriptions of Procedures

Topics that provide step-by-step instructions for how to perform a specific task. These topics often provide an example for why you might want to follow the steps and a brief summary of the result, including consequences to be aware of.

Because of this division of information, our documentation structure functions as a reference you can consult for specific information or instructions as required, rather than a guide you must read from start to finish.

TIP

Descriptive topics do not describe how to perform a task, and procedural topics do not explain what something is. To find general information about items or concepts, we recommend searching for them by name, such as “events”. To find instructions for performing particular actions, we recommend including a relevant verb in your search, such as “recording”.

Links at the bottom of topics guide you to further relevant content. You can also check the sidebar for nearby, related topics in the documentation structure.

Typographical Conventions

In our documentation, we use structural and markup elements to present information according to its purpose.

Structural Elements

Prerequisite

Describes any actions or conditions you must have fulfilled before starting a procedure.

Procedure

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

Important

Informs you about serious issues; for example, issues that affect the system, the connected hardware, or that risk data loss.

Note

Informs you about issues or other relevant information.

Tip

Adds further information or useful suggestions.

Example

Provides you with an example.

Result

Describes the result of the procedure.

After Completing This Task

Informs you about actions or tasks that you can perform 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, and so on.

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**.

File names and folder paths are shown in a different font.

EXAMPLE

`example_file.txt`

Key Commands

Many of the default key commands, also known as keyboard shortcuts, use modifier keys, some of which are specific to each operating system.

Whenever key commands with modifier keys are described in this manual, the Windows modifier key is indicated first, followed by the macOS modifier key and the key.

EXAMPLE

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

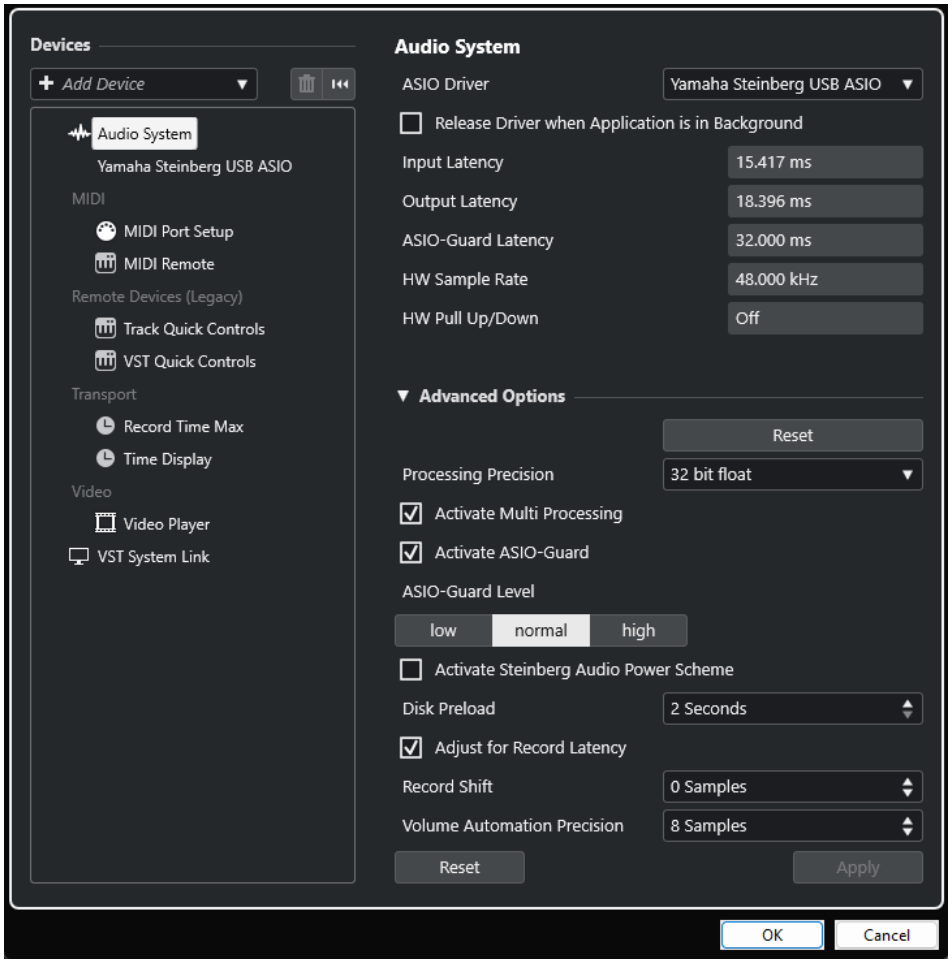
Setting up Your System

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

Studio Setup Dialog

The **Studio Setup** dialog allows you to set up your connected audio, MIDI, and remote control devices.

- To open the **Studio Setup** dialog, select **Studio** > **Studio Setup**.



The following options are available in the **Devices** section to the left:

Add Device

Allows you to manually add devices such as a **Note Expression Input Device**, an additional **Time Display** device, or specific remote control devices.

Remove Selected Device

Allows you to remove manually added devices.

Reset All Devices

Resets all devices in the devices list.

Devices list

Select a device in the **Devices** list to show its settings in the right section.

The following options are available at the bottom of the page for each device:

Reset

Sends a reset signal to the active ASIO device and restarts the audio processing. This can solve problems with audio playback.

NOTE

This leads to a short interruption of the playback.

Apply

Applies your settings on this page.

RELATED LINKS
Audio System Page on page 18
ASIO Driver Setup Page on page 20
MIDI Port Setup Page on page 25

Setting up Audio

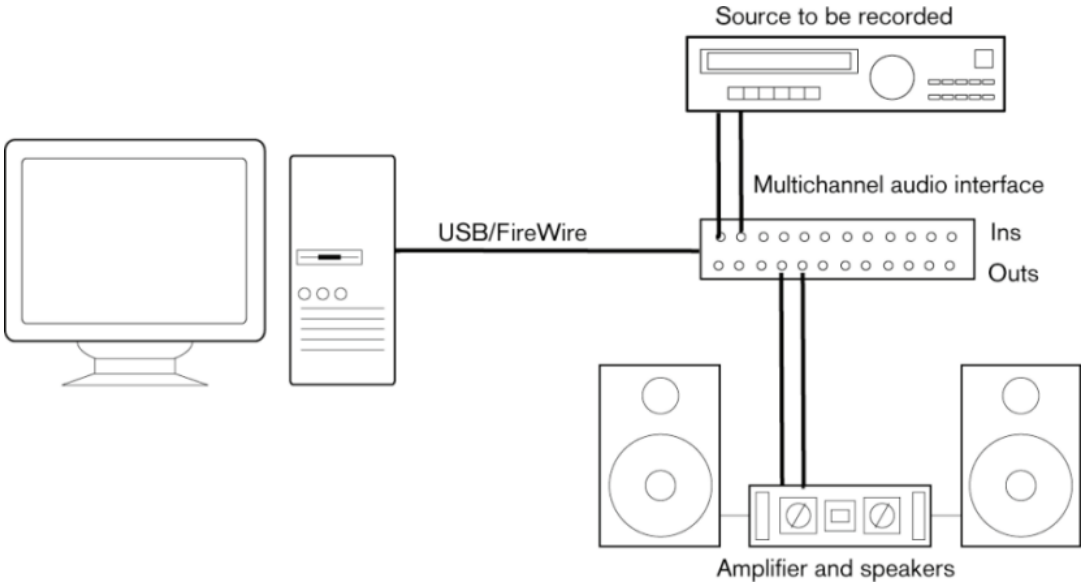
You must set up your audio equipment before you can use it in Cubase.

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.

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 example, different inputs can be used, such as consumer line level (-10 dBV) or professional line level (+4 dBu).

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 via 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 **Studio** > **Studio Setup**.
2. In the **Devices** list, select **Audio System**.
3. Open the **ASIO Driver** pop-up menu and select your audio hardware driver.
4. Click **Switch** to confirm your choice.

Setting up Audio Hardware

You must select and set up your audio hardware in the **Studio Setup** dialog before you can use it.

PREREQUISITE

You have selected a driver for your audio hardware.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Devices** list, select your audio hardware driver.
3. Do one of the following to open the control panel for your audio hardware:
   - On Windows, click **Control Panel**.
   - On macOS, click **Open Config App**.

     This button is available only for particular hardware products. If it is not available in your setup, refer to the documentation of your audio hardware.

NOTE

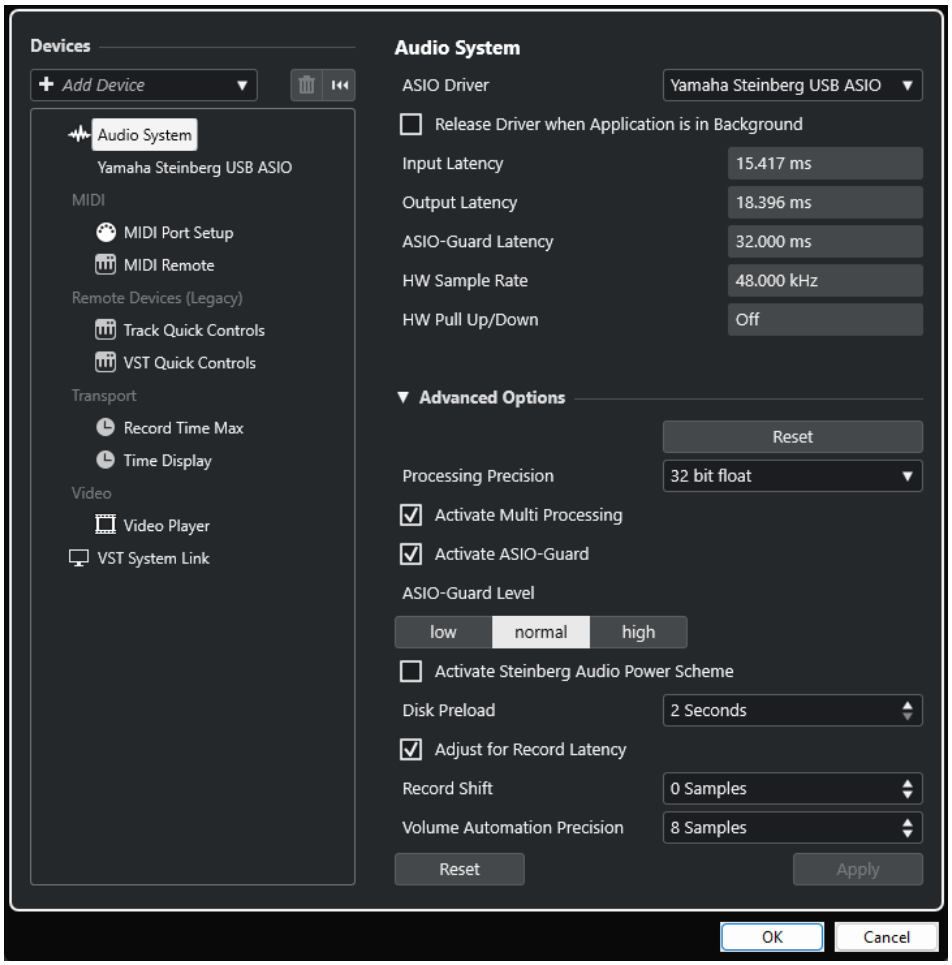
The control panel is provided by the manufacturer of your audio hardware, and it is different for each audio interface brand and model. However, control panels for the Generic Low Latency ASIO Driver (Windows only) are provided by Steinberg.

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

Audio System Page

On the **Audio System** page, you can select an ASIO driver for your audio hardware.

- To open the **Audio System** page, select **Studio** > **Studio Setup** and select **Audio System** in the **Devices** list.



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 if 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.

In the **Advanced Options** section, the following options are available:

Reset

Allows you to reset the options in this section to their defaults.

Processing Precision

Allows you to set the audio processing precision to 32 bit float or 64 bit float. Depending on this setting, all channels are processed and mixed in 32-bit floating-point or 64-bit floating-point format.

NOTE

A processing precision of 64 bit float can increase CPU load and memory consumption.

To show all plug-ins that support 64-bit float processing, open the **VST Plug-in Manager** from the **Studio** menu, and activate **Show Plug-ins That Support 64-Bit Float Processing** in the **Display Options** pop-up menu.

NOTE

VST 2 plug-ins and instruments are always processed with 32-bit precision.

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.

ASIO-Guard Level

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

Activate Steinberg Audio Power Scheme

Deactivates all power save modes that have an impact on real-time processing.

NOTE

This only works for very low latencies, and it increases the power consumption of your computer.

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 option is activated, the plug-in latencies are taken into account during recording.

Record Shift

Allows you to shift the recordings by the specified value.

Volume Automation Precision

Allows you to set the number of samples after which a new volume automation event is processed. The automation curve between the processed events is interpolated. This smoothens transitions between automation events and prevents sudden jumps which may lead to crackles.

At the bottom of the page, the following options are available:

Reset

Sends a reset signal to the active ASIO device and restarts the audio processing. This can solve problems with audio playback.

NOTE

This leads to a short interruption of the playback.

Apply

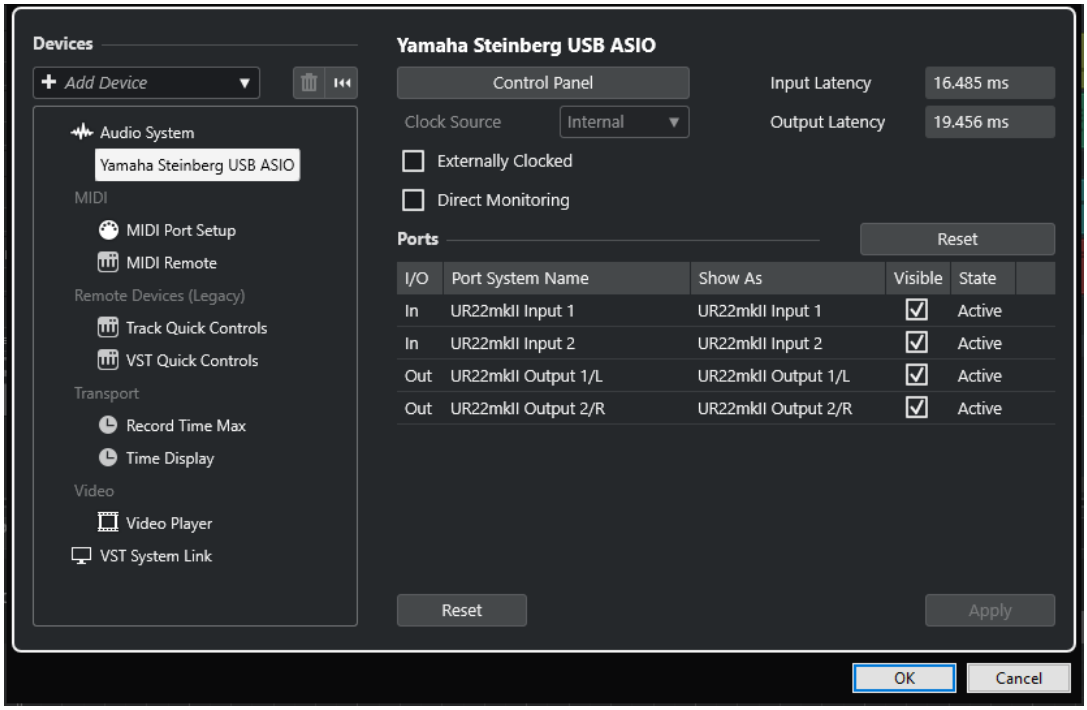
Applies your settings on this page.

RELATED LINKS
VST Plug-in Manager Window on page 683

ASIO Driver Setup Page

This page allows you to set up your ASIO driver.

- To open the page where you can set up the ASIO driver, select **Studio** > **Studio Setup** and select the audio driver in the **Devices** list.



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.

In the **Ports** section, the following options are available:

Reset
Allows you to restore the default port names and to enable the visibility for all ports.

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.

At the bottom of the page, the following options are available:

Reset
Sends a reset signal to the active ASIO device and restarts the audio processing. This can solve problems with audio playback.

NOTE

This leads to a short interruption of the playback.

Apply
Applies your settings on this page.

Using External Clock Sources

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

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Devices** list, select 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 **Project** window 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 if Cubase is running.

PREREQUISITE

You have set other audio applications that access the audio hardware to release the audio driver.

PROCEDURE

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

RESULT

The application that has the focus can access 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.

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 **Studio** > **Studio Setup**.
2. In the **Devices** list, select your audio hardware driver.
3. Make your changes.
4. Click **OK**.

RELATED LINKS

ASIO Driver Setup Page on page 20

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

Audio Connections on page 29

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 268

Monitoring via Cubase on page 268
ASIO Direct Monitoring on page 269

Setting up MIDI

You must set up your MIDI equipment before you can use it in Cubase.

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.

Showing or Hiding MIDI Ports

You can show the MIDI ports that you want to use and hide those that you do not use on the MIDI pop-up menus in the program.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Devices** list, select **MIDI Port Setup**.
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. For this to work, you must first set up which inputs are included when you select **All MIDI Inputs** for a MIDI track.

PROCEDURE

1. Select **Studio** > **Studio Setup**.

2. In the **Devices** list, select **MIDI Port Setup**.
3. Activate **In 'All MIDI Inputs'** for a port.

   NOTE

   If you have connected a MIDI remote control unit, 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**.

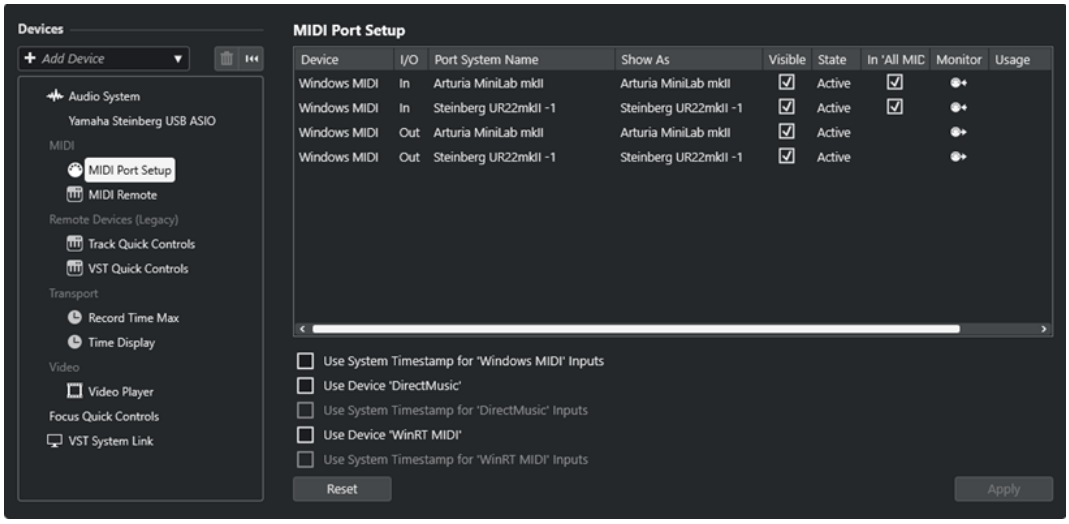
RESULT

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

MIDI Port Setup Page

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

- To open the **MIDI Port Setup** page, select **Studio** > **Studio Setup** and activate **MIDI Port Setup** in the **Devices** list.



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.

State

The state of the MIDI port.

Monitor

Opens the **Input Monitor**/**Output Monitor** window that allows you to monitor incoming/outgoing MIDI events.

Usage

If you connect a MIDI controller and use it on the **MIDI Remote** tab in the lower zone of the **Project** window, the corresponding port **Usage** columns change to display the name of the connected controller. These ports are used for remote control only.

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.

Use Device 'WinRT MIDI'

Activates the Windows **Runtime MIDI API**, **WinRT MIDI**, that allows for native support of bluetooth MIDI in Windows, better plug and play, and better handling of multiple identical devices.

If you have problems with bluetooth MIDI and plug and play, deactivate **Use Device 'WinRT MIDI'**, reconnect your bluetooth MIDI device, and activate **Use Device 'WinRT MIDI'** again.

Use System Timestamp for 'WinRT 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.

At the bottom of the page, the following options are available:

Reset

Allows you to restore the default port names and to enable the visibility for all ports.

Apply

Applies your settings on this page.

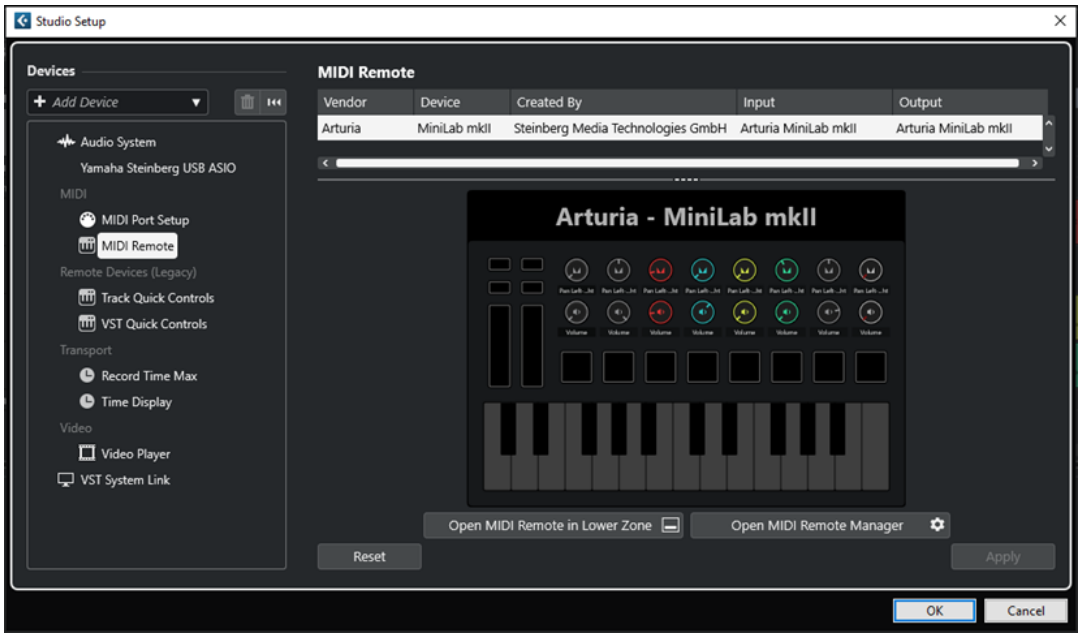
Plug and Play Support for MIDI Devices

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

MIDI Remote Page

The **MIDI Remote** page in the **Studio Setup** dialog displays the connected MIDI controllers.

- To open the **MIDI Remote** page, select **Studio** > **Studio Setup** and activate **MIDI Remote** in the **Devices** list.



The following columns are displayed:

Vendor

Shows information about the vendor of the connected MIDI controller.

Device

Shows the connected MIDI controller.

Created By

Shows information about the script creator for the connected MIDI controller.

Input

Shows the input port of your MIDI controller.

Output

Shows the output port of your MIDI controller.

Open MIDI Remote in Lower Zone

Opens the **MIDI Remote** tab in the lower zone of the **Project** window.

Open MIDI Remote Manager

Opens the **MIDI Remote Manager** that shows information about the connected MIDI controllers and the installed scripts.

At the bottom of the page, the following options are available:

Reset

Allows you to restore the default port names and to enable the visibility for all ports.

Apply

Applies your settings on this page.

RELATED LINKS
MIDI Remote on page 694

Synchronizers

When using Cubase with external tape transports, you must probably 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 1058

Audio Connections

To play back and record in Cubase, you must set up input and output busses in the **Audio Connections** window.

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

Audio Connections Window

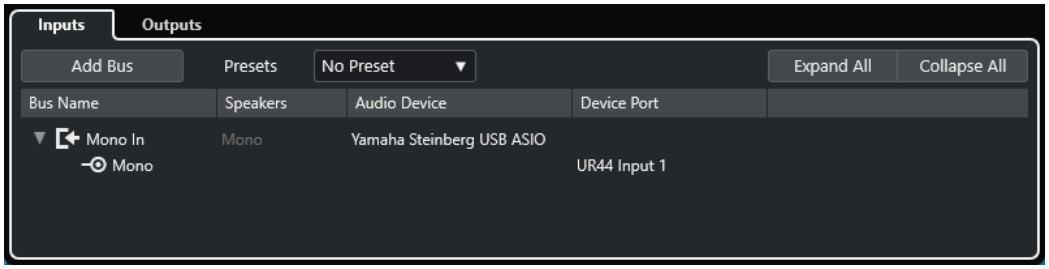
The **Audio Connections** window allows you to set up input and output busses.

To open the **Audio Connections** window, do one of the following:

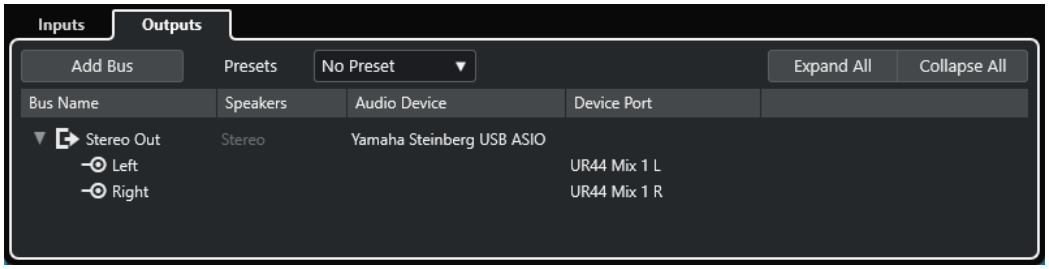
- Select **Studio** > **Audio Connections**.
- Press **F4**.

Inputs/Outputs Tab

The **Inputs** and **Outputs** tabs allow you to set up and configure input and output busses.



Inputs tab



Outputs tab

The following options are available above the bus list:

Add Bus

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

Presets

Opens the **Presets** pop-up menu, where you can select bus configuration presets. **Save Preset** allows you to save a bus configuration as preset. **Remove Preset** deletes the selected preset.

Expand All/Collapse

Expands/Collapses all busses in the bus list.

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) 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 three 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 Adat1 port is already assigned to three stereo busses plus two additional busses.

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 you to transfer 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 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 opens. This allows you to manually re-route ports that are used in the project to ports on your computer.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Devices** list, select **Audio System**.
3. Open the **ASIO Driver** pop-up menu and select your audio hardware driver.
4. In the **Devices** list, select your audio hardware driver.
5. In the **Show As** column, click on a port name and enter a new name.
6. Repeat the previous step until you have renamed all required ports.
7. Click **OK**.

RELATED LINKS

Re-Routing Missing Ports on page 104

Hiding Ports

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

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Devices** list, select your audio hardware driver.
3. In the **Visible** column, deactivate the ports that you want to hide.
4. Click **OK**.

Activating and Deactivating Ports (macOS only)

On macOS, 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 some other audio cards.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Devices** list, select your audio hardware driver.
3. Click **Control Panel**.
4. Activate/Deactivate ports.
5. Click **OK**.

Adding Input and Output Busses

You must add input and output busses to establish the connection between your audio hardware and Cubase.

PROCEDURE

1. In the **Audio 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 for your audio hardware.

Setting the Default Output Bus (Main Mix)

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 **Audio 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 the default bus. **Main Mix** is indicated by a speaker icon next to its name.

RELATED LINKS

Inputs/Outputs Tab on page 29

Presets for Input and Output Busses

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

- 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 you create a new empty project.

Saving a Bus Configuration Preset

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

PROCEDURE

1. Select **Studio** > **Audio Connections**.
2. Click the **Inputs** or **Outputs** tab, and set up your bus configuration.
3. Open the **Presets** menu, and select **Save Preset**.
4. In the **Save Preset** dialog, enter a name.
5. Click **OK**.

RESULT

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

Deleting a Bus Configuration Preset

You can delete bus configuration presets that you no longer need.

PROCEDURE

1. Select **Studio** > **Audio Connections**.
2. Click the **Inputs** or **Outputs** tab.
3. From the **Presets** menu, select the preset that you want to delete.
4. Select **Remove Preset**.

RESULT

The preset is deleted.

Monitoring Bus

The default output bus (**Main Mix**) is used for monitoring. You can adjust the monitoring level in the **MixConsole**.

RELATED LINKS

Setting the Default Output Bus (Main Mix) on page 32
MixConsole on page 346

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

You can remove busses that you no longer need.

PROCEDURE

- In the **Audio Connections** window, do one of the following:
  - To remove a single bus, right-click the bus in the list and select **Remove Bus**.
    Alternatively, you can select the bus and press **Backspace**.
  - To remove multiple input or output busses at the same time, use **Shift** or **Ctrl/Cmd** to select them in the list, right-click them, and select **Remove Selected Busses**.

Changing Port Assignments

You can change the port assignment of busses.

PROCEDURE

1. Select **Studio** > **Audio Connections**.

2. Do one of the following:
   - To change the assignment of a single bus, open the **Device Port** pop-up menu, and select a new port.
   - To assign subsequent busses to several selected busses, open the **Device Port** pop-up menu for the first selected entry, press **Shift**, and select a device port.
   - To assign the same port to several selected busses, open the **Device Port** pop-up menu for the first selected entry, press **Shift**-**Alt/Opt**, and select a device port.

Renaming Multiple Busses

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

PROCEDURE

1. Select **Studio** > **Audio Connections**.
2. Select the busses that you want to rename.
3. Do one of the following:
   - Enter a new name for one of the busses, followed by a number.
   - Enter a new name for one of the busses, followed by a space and a capital letter.
4. Press **Return**.

RESULT

The busses are renamed automatically, using either incrementing numbers or letters.

NOTE

The renaming starts from the bus where you edit the name and runs to the bottom. Then it continues from the top until all selected busses have been renamed.

Exclusive Port Assignments

For specific 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 is broken.

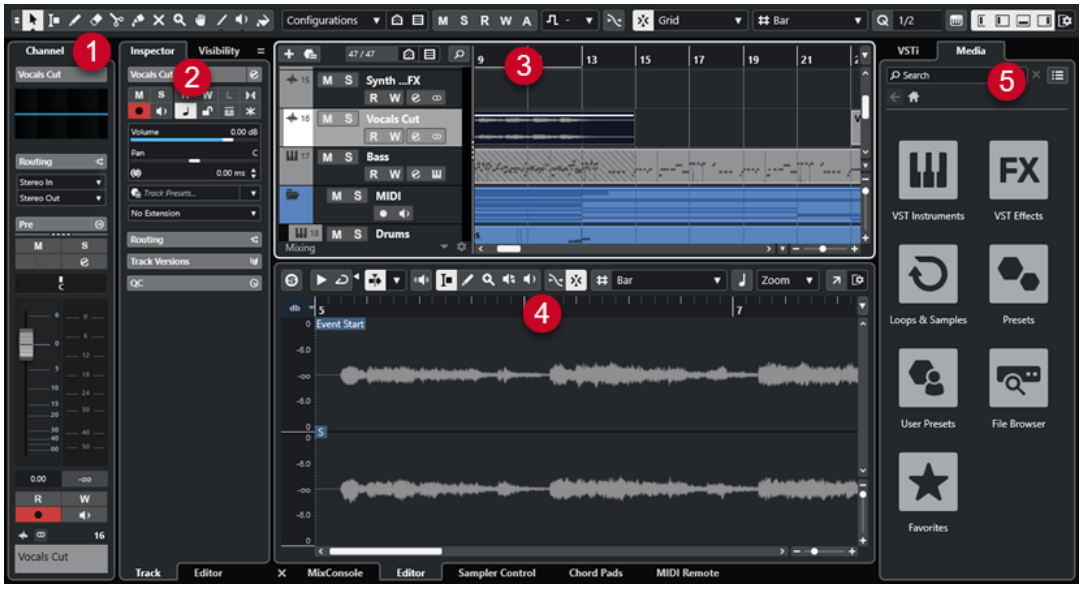
The corresponding ports are marked in the **Audio Connections** window on the **Device Port** pop-up menu.

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 sections:

1 Channel

The **Channel** tab shows the channel-related sections and layouts for the track that is selected in the track list.

2 Left Zone

The left zone shows the **Inspector** that features the **Track** tab and the **Editor** tab:

- The **Track** tab shows the settings for the track that is selected in the track list.

  NOTE

  In this documentation, we use **Inspector** to refer to the **Track** tab of the **Inspector**.

- The **Editor** tab shows the settings for the editor that is open in the lower zone.

The left zone also features a **Visibility** tab.

3 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 Bar**.

4 **Lower Zone**

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

5 **Right Zone**

The right zone shows the **VSTi** rack, and the **Media** rack.

RELATED LINKS
Project Zone on page 37
Track Visibility on page 58
Channel Tab on page 52
Project Window Left Zone on page 54
Project Window Lower Zone on page 62
Project Window Right Zone on page 69
Project Window Toolbar on page 38

Menus in Cubase

The main menus and submenus in Cubase provide access to all features and settings of the program.

On Windows, the full menu is available in the **Project** window. Other windows offer their own menus with a reduced number of menu entries which are useful in the respective context. In the **Hub**, the menu is always shown. The menu of all other windows can be shown/hidden by activating/deactivating **Show Menu Bar** in the context menu of the corresponding window title.

On macOS, all menus are available via the system menu bar on the top of the screen.

Showing/Hiding Menu Bars (Windows only)

On Windows, you can choose whether to show or hide the menu bars of most windows.

NOTE

For the **Hub** you cannot hide the menu bar.

PROCEDURE

- To show/hide the menu bar of a window, right-click its title bar and activate/deactivate **Show Menu Bar**.

RELATED LINKS
Menus in Cubase on page 36

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 **Channel** tab, click **Show/Hide Channel** on the **Project** window toolbar.

- 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

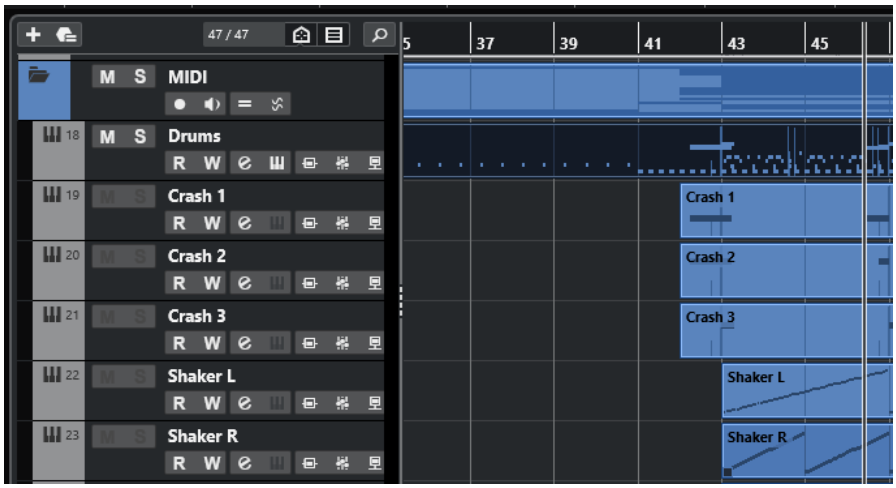
The project zone is always shown.

RELATED LINKS
Project Window Toolbar on page 38
Channel Tab on page 52
Project Window Left Zone on page 54
Project Window Lower Zone on page 62
Project Window Right Zone on page 69

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 Bar** for the project zone.



RELATED LINKS
Track List on page 45
Event Display on page 46
Global Track Controls on page 46
Ruler on page 48
Status Line on page 50
Info Line on page 51
Overview Line on page 52
Transport Bar on page 52

Project Window Toolbar

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

- To show/hide tools, right-click an empty area of the toolbar and activate the tools that you want to display. To show all tools, click **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:

Project Activation Control

Activate Project

NOTE

Only available if more than one project is open.

Activates a project.

Project History

Undo/Redo

Undoes/Redoes actions in the **Project** window.

Constrain Delay Compensation

Constrain Delay Compensation

Minimizes the latency effects of the delay compensation.

Left Divider

Left Divider

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

Media & MixConsole Windows

Open MediaBay

Opens/Closes the **MediaBay**.

Open Pool Window

Opens/Closes the **Pool** window.

Open MixConsole

Opens/Closes the **MixConsole**.

Track Visibility Configurations

Track Visibility Configurations

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

Set Track Visibility Agents

Allows you to set a visibility agent to filter the tracks.

Set Track Type Filter

Allows you to filter the tracks by track type. **Ctrl/Cmd**-click to reset the track type filter.

State Buttons

Deactivate All Mute States

Deactivates all mute states.

Deactivate All Solo States

Deactivates all solo states.

Activate/Deactivate Read for All Tracks

Activates/Deactivates read automation for all tracks.

Activate/Deactivate Write for All Tracks

Activates/Deactivates write automation for all tracks.

Suspend All Read/Write Automation

Suspends all read/write automation.

Auto-Scroll

Auto-Scroll

Keeps the project cursor visible during playback.

Select Auto-Scroll Settings

Allows you to activate **Page Scroll** or **Stationary Cursor** and to activate **Suspend Auto-Scroll When Editing**.

Locators

Go to Left Locator Position

Allows you to go to the left locator position.

Left Locator Position

Shows the left locator position.

Go to Right Locator Position

Allows you to go to the right locator position.

Right Locator Position

Shows the right locator position.

Transport Controls

Go to Previous Marker/Zero

Moves the project cursor to the previous marker/zero position on the timeline.

Go to Next Marker/Project End

Moves the project cursor to the next marker/project end.

Rewind

Moves backward.

Forward

Moves forward.

Activate Cycle

Activates/Deactivates cycle mode.

Stop

Stops playback.

Start

Starts playback.

Transport Record

Activates/Deactivates record mode.

Tool Buttons

Combine Selection Tools

Combines the **Object Selection** tool and the **Range Selection** tool.

Object Selection

Selects events and parts.

Range Selection

Selects ranges.

Draw

Draws events.

Erase

Erases events.

Split

Splits events.

Glue

Glues events together.

Mute

Mutes events.

Zoom

Zooms in. Hold **Alt/Opt** and click to zoom out.

Comp

Assembles takes.

Line

Creates a series of contiguous events.

Play

Allows you to play back events.

Color

Allows you to colorize events.

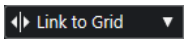
Color Menu

Select Color for Selected Tracks or Events

Opens the **Colorize** pane that allows you to colorize the selected tracks or events.

Nudge

Nudge Settings



Allow you to set up a snap grid for the nudge commands.

- By default, the snap grid for nudge operations is set to **Link to Grid**, and the step width corresponds to the snap grid.
- If you activate **Link to Primary Time Format**, the snap grid for nudge operations follows the primary time format, and you can set up the step width in the **Nudge Settings** pop-up menu.
- If you deactivate **Link to Grid** and **Link to Primary Time Format**, you can set up a snap grid that is fully independent for nudge operations. In this case, you can select a time format and a value from the **Nudge Settings** pop-up menu.

NOTE

To show the nudge buttons, click the points to the right of the **Nudge Settings**.

Nudge Start Left

Increases the length of the selected event by moving its start to the left.

Nudge 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.

Nudge End Left

Decreases the length of the selected event by moving its end to the left.

Nudge End Right

Increases the length of the selected event by moving its end to the right.

Project Root Key

Project Root Key

Changes the root key of the project.

Snap

Snap to Zero Crossing

Restricts editing to zero crossings, that is, positions where the amplitude is zero.

Snap On/Off

Restricts horizontal movement and positioning to the positions specified by the **Snap Type**.

Snap Type

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

Grid Type

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

Apply Quantize

Applies the quantize settings.

Quantize Presets

Allows you to select a quantize preset.

Soft Quantize On/Off

Activates/Deactivates soft quantize.

AudioWarp Quantize On/Off

Activates/Deactivates **AudioWarp** quantize.

Open Quantize Panel

Opens the **Quantize Panel**.

Audio Performance Meter

Audio Performance Meter

The upper bar displays either the current realtime peak or the ASIO-Guard load, depending on which of the two has the higher value. The lower bar shows the hard disk transfer load of the disk engine.

For a more detailed display of realtime peak and ASIO-Guard load, click to open the **Audio Performance** panel.

MIDI Remote Mapping Assistant

Open MIDI Remote Mapping Assistant

Opens the **MIDI Remote Mapping Assistant**.

Right Divider

Right Divider

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

Window Zone Controls

Show/Hide Channel

Shows/Hides the **Channel** tab.

Show/Hide Left Zone

Shows/Hides the left zone of the window.

Show/Hide Lower Zone

Shows/Hides the lower zone of the window.

Show/Hide Right Zone

Shows/Hides the right zone of the window.

Set up Window Layout

Allows you to set up the window layout.

RELATED LINKS
Left/Right Toolbar Divider on page 44
Snap Types Menu on page 80
Markers on page 337
Automation on page 654
Synchronization on page 1058
Audio Performance Panel on page 1123

Left/Right Toolbar Divider

The left and right toolbar dividers allow you to lock the position of specific tools on the left or on 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.

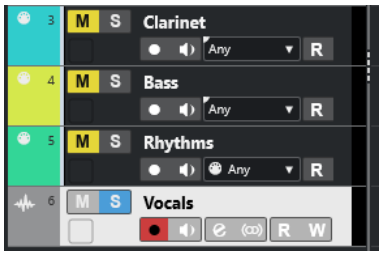
- To activate the toolbox function, activate **Show Toolbox on Right-Click** in the **Preferences** dialog (**Editing—Tools** page).
- To open the toolbox, right-click in the event display or editor.

  If **Show 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 **Show Toolbox on Right-Click** is deactivated, press any modifier key to open the toolbox instead of the context menu.

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.

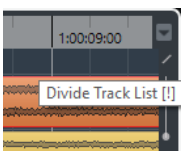
RELATED LINKS
Track Controls Settings Dialog on page 148

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.

PROCEDURE

- Do one of the following:
  - Select **Project** > **Divide Track List**.
  - Click **Divide Track List** in the top right corner of the **Project** window below the ruler.



RESULT

The track list is divided, and video, marker, or arranger tracks are automatically moved to the upper track list. All other track types are moved to the lower track list.

NOTE

The area of the project zone that has the focus is indicated by a highlighted and solid focus frame, whereas the non-active area is shown with a dashed frame.

AFTER COMPLETING THIS TASK

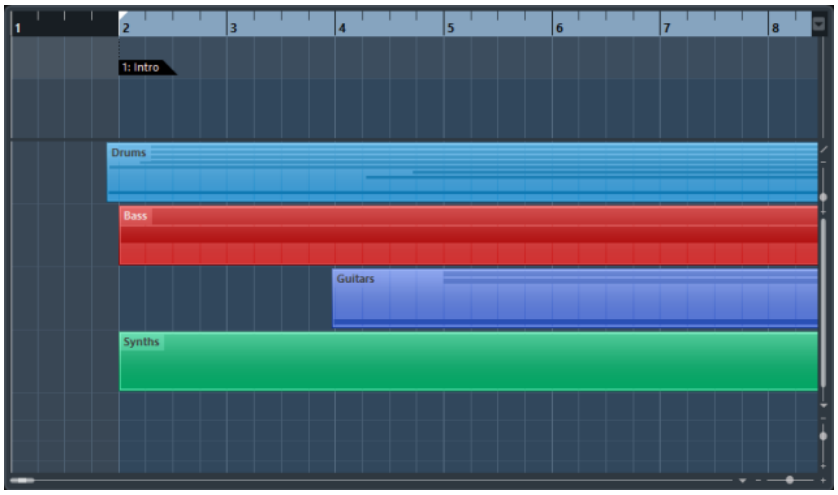
- To move any type of track from the lower track list to the upper track list and vice versa, right-click it in the track list and select **Toggle Track List** from the context menu.
- To resize the upper part of the track list, click and drag the divider between the track list sections.
- To revert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

RELATED LINKS

Keyboard Focus in the Project Window on page 75

Event Display

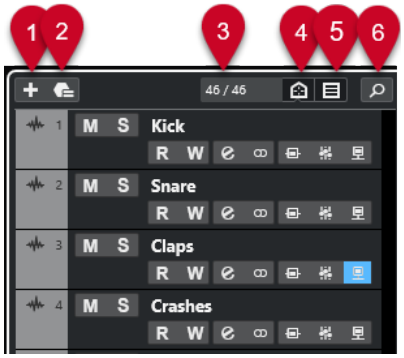
The event display shows the parts and events that are used in the project. They are positioned along the timeline.



Global Track Controls

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

- The global track controls are shown above the track list.



1 **Add Track**

Opens the **Add Track** dialog.

2 **Use Track Preset**

Allows you to add a track using a track preset.

3 **Number of Visible Tracks**

Displays how many tracks are filtered out by the **Visibility** tab.

4 **Set Track Visibility Agents**

Allows you to set a visibility agent to filter the tracks.

5 **Set Track Type Filter**

Determines which track types are shown in the track list.

6 **Find Tracks**

Allows you to search for specific tracks in the track list.

RELATED LINKS

Opening the Track Visibility on page 59

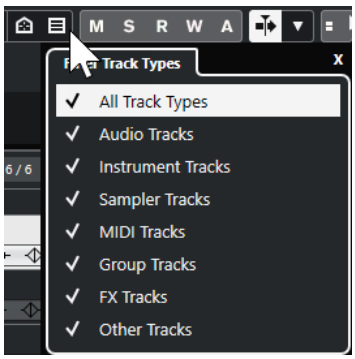
Filtering Track Types

You can filter tracks by their track type.

PROCEDURE

1. Click **Set Track Type Filter** above the track list.

   This opens the track type filter.



2. Uncheck a track type to hide it.

RESULT

Filtered track types are removed from the track list. The color of the **Set Track Type Filter** button changes to indicate that one or more track types are hidden.

NOTE

To reset the track type filter **Ctrl/Cmd**-click **Set Track Type Filter**.

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 via the **Visibility** tab.

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.

RESULT

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

NOTE

Hidden tracks and tracks outside the view are now visible to you. Tracks that are hidden using **Set Track Type Filter** are not shown.

Ruler

By default, 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.

However, you can select an independent display format for the ruler.

- 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, or right-click anywhere in the ruler.

The ruler settings affect the ruler, the info line, and the tooltip position values.

You can also select independent formats for other rulers and position displays.

NOTE

To set the display format globally for all windows, use the **Display Format** pop-up menu in the **Project Setup** dialog or the **Select Primary Time Format** pop-up menu on the **Transport** panel, or hold down **Ctrl/Cmd** and select a format in any ruler.

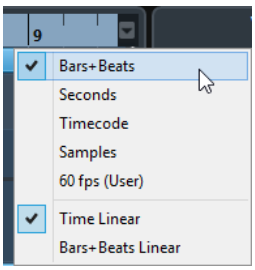
RELATED LINKS

Project Setup Dialog on page 100
Ruler Modes on page 49
Selecting the Primary Time Format on page 246

Ruler Display Format Menu

You can select a display format for the ruler.

- To show the ruler display formats, click the arrow button to the right of the ruler.



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

Sets the ruler to display bars, beats, sixteenth notes, and ticks. By default, there are 120 ticks per sixteenth note. To change this, adjust the **MIDI Display Resolution** setting in the **Preferences** dialog (**MIDI** page).

Seconds

Sets the ruler to display hours, minutes, seconds, and milliseconds.

Timecode

Sets the ruler to display hours, minutes, seconds, and frames. You can set the number of frames per second (fps) via the **Project Frame Rate** pop-up menu in the **Project Setup** dialog. To display subframes, activate **Show Timecode Subframes** in the **Preferences** dialog (**Transport** page).

Samples

Sets the ruler to display samples.

fps (User)

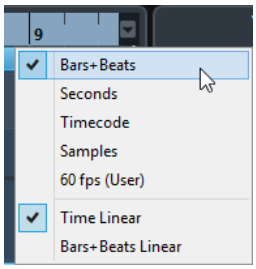
Sets the ruler to display hours, minutes, seconds, and frames, and it allows you to define the number of frames per second. To display subframes, activate **Show Timecode Subframes** in the **Preferences** dialog (**Transport** page).

RELATED LINKS
Ruler Modes on page 49

Ruler Modes

By default, the ruler follows the primary time format, that is, the display format that you set up in the **Project Setup** dialog or on the **Transport**. The ruler modes, however, allow you to set up a display format for the ruler that differs from the display format in the main time display.

- To show the ruler modes, click the arrow button to the right of the ruler.



Time Linear

Sets the ruler relative to the time. If there are tempo changes on the **Tempo** track, the distance between the bars varies in **Bars+Beats** mode.

Bars+Beats Linear

Sets the ruler relative to the meter position, that is, bars and beats. If there are tempo changes on the **Tempo** track, the distance between the bars remains the same in **Bars+Beats** mode. If the ruler is set to a time-based mode, the distance between seconds varies depending on the tempo changes.

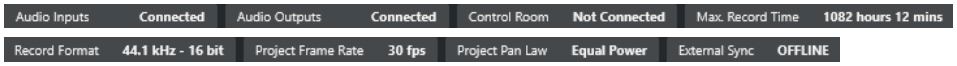
RELATED LINKS
Editing Tempo and Time Signature on page 1023
Ruler Display Format Menu on page 49
Project Setup Dialog on page 100
Selecting the Primary Time Format on page 246

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:



NOTE

To show/hide status line elements, right-click an empty area of the status line and activate the corresponding options. To show all elements, click **Show All**.

Record Time

Max. Record Time

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

Record File Format

Record Format

Displays the sample rate and the bit depth used for recording. Click to open the **Project Setup** dialog.

Project Frame Rate

Project Frame Rate

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

Project Pan Law

Project Pan Law

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

External Sync State

External Sync State

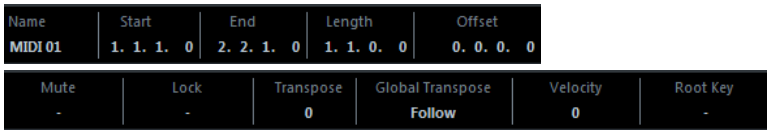
Displays the current pan law setting. Click in this field to open the **Project Setup** dialog.

RELATED LINKS
Project Window Toolbar on page 38

Info Line

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

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



NOTE

To show/hide info line elements, right-click an empty area of the info line and activate the corresponding options. To show all elements, click **Show All**.

RELATED LINKS
Project Window Toolbar on page 38

Value Editing Rules on the Info Line

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

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

- Value changes are applied to all selected elements, relative to the current values.

  Example: You have selected two audio events. The first event has a length of 1 bar, the second event has a length of 2 bars. If you change the info line value to 3, the first event is resized to 3 bars and the second event is resized to 4 bars.
- Value changes are applied absolute 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.

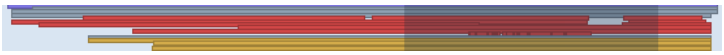
NOTE

To change the modifier, select a new modifier in the **Info Line** category of the **Preferences** dialog (**Editing—Tool Modifiers** page).

Overview Line

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

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



On 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 to the right, or click in the upper part of the overview.

RELATED LINKS
Project Window Toolbar on page 38

Transport Bar

The **Transport Bar** displays the transport functions in an integrated zone of the **Project** window.

- To activate the **Transport Bar**, click **Set up Window Layout** on the **Project** window toolbar and activate **Transport Bar**.
- To show/hide tools, right-click an empty area of the **Transport Bar**, and activate the tools that you want to display. To show all tools, click **Show All**.

RELATED LINKS
Common Record Modes Menu on page 267
Audio Record Modes on page 272
MIDI Record Modes on page 279
Left/Right Toolbar Divider on page 44
Project Window Toolbar on page 38

Channel Tab

The **Channel** tab shows the channel-related sections and layouts for the track that is selected in the track list.

To show/hide the **Channel** tab, do one of the following:

- In the **Project** window toolbar, click **Show/Hide Channel**.
- In the **Project** window toolbar, click **Set up Window Layout**, and activate **Channel**.

- If the selected track does not have a corresponding channel or if the track is disabled, the **Channel** tab is empty.
- If the selected track is a MIDI or instrument track that is routed to an external MIDI port, the **Channel** tab shows the MIDI channel.
- If the selected track is a MIDI or instrument track that is routed to a multitimbral rack or track instrument, the **Channel** tab shows the first return channel.
- If the selected track is a MIDI or instrument track that is routed to a multi-out instrument, the **Channel** tab shows a control that allows the user to choose which return channel is shows.

NOTE

You can adjust the width of the **Channel** tab by dragging its right divider to the left or to the right.

RELATED LINKS
Track List on page 45
Channel Sections on page 147
Inspector on page 55

Opening the Channel Tab

If the **Channel** tab is not shown, you can show it via the **Project** window toolbar.

PROCEDURE

1. Select a track in the track list.
2. Do one of the following:
   - On the **Project** window toolbar, activate **Show/Hide Channel**.

- On the **Project** window toolbar, click **Set up Window Layout**, and activate the **Channel** option.

RESULT

The **Channel** tab for the selected track opens. If more than one track is selected in the track list, the controls and parameters for the topmost selected track are shown.

RELATED LINKS

Channel Tab on page 52
Track Inspector Sections on page 130

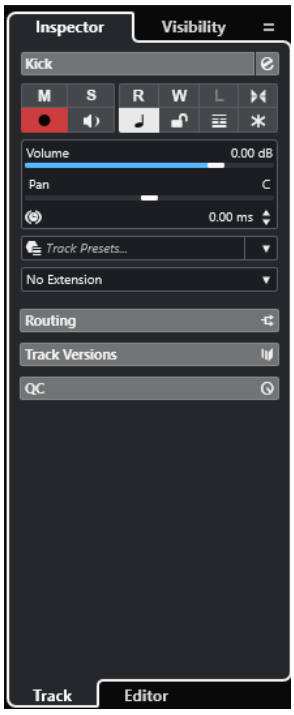
Project Window Left Zone

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

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

The top of the left zone features the following tabs:

- **Inspector**
- **Visibility**



RELATED LINKS

Inspector on page 55
Track Visibility on page 58
Project Window Toolbar on page 38

Inspector

The **Inspector** displays controls and parameters for either the selected track in the track list or the event or part that is displayed in the editor in the lower zone.

- To show/hide the **Inspector**, click **Show/Hide Left Zone** in the **Project** window toolbar.

The following tabs are available:

Track

Opens the **Track Inspector** for the selected track.

Editor

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

NOTE

You can adjust the width of the **Inspector** by dragging its right divider to the left or to the right.

RELATED LINKS

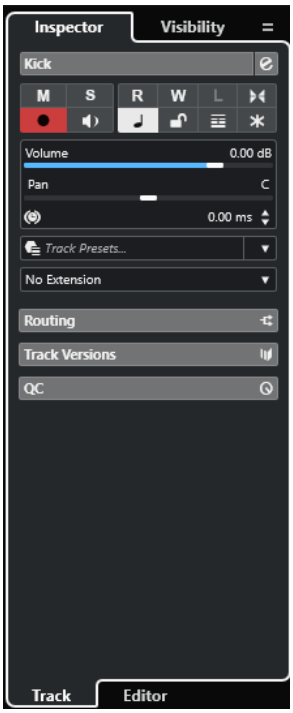
Opening the Track Inspector on page 55
Opening the Editor Inspector on page 56
Opening the Editor in the Lower Zone on page 66

Opening the Track Inspector

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

PROCEDURE

1. If the **Left Zone** is not visible, click **Show/Hide Left Zone** on the **Project** window toolbar to activate it.
2. At the bottom of the left zone, click the **Track** tab.



RESULT

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

NOTE

In this documentation, we use **Inspector** to refer to the **Track** tab of the **Inspector**.

RELATED LINKS

Opening the Editor Inspector on page 56

Opening the Editor Inspector

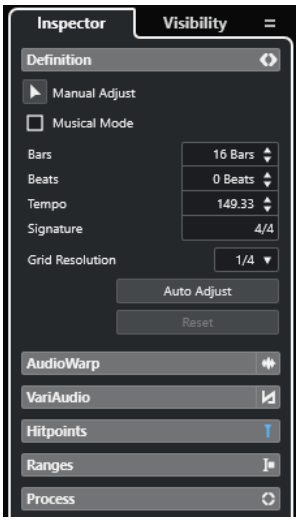
The **Editor Inspector** shows controls and parameters for the event or part that is displayed in the editor in the lower zone.

PREREQUISITE

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

PROCEDURE

1. If the left zone is not visible, 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 opens.

NOTE

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

RELATED LINKS

Opening the Track Inspector on page 55
Opening the Editor in the Lower Zone on page 66

Inspector Sections

The **Track** tab and the **Editor** tab of the **Inspector** are divided into 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** tab and the **Editor** tab of the **Inspector**.

- To show/hide sections, right-click an empty space in the **Inspector**, and activate/deactivate the corresponding options.
- To open/close sections, click their names.

NOTE

To show the selected section exclusively and collapse the other sections, right-click the section header and activate **Expand Sections Exclusively**.

RELATED LINKS

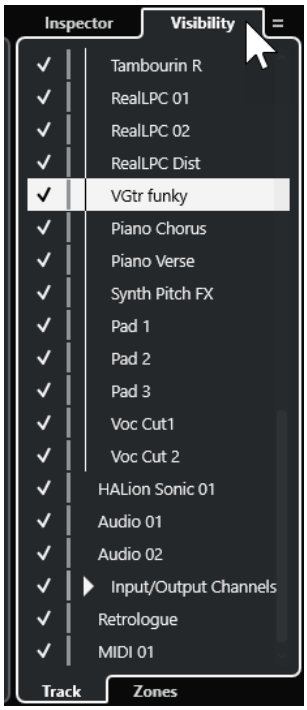
Set up Inspector Sections Pane on page 130
Track Inspector Sections on page 130
Basics Section for Audio Tracks on page 132
Basics Section for Instrument Tracks on page 135
Basics Section for MIDI Tracks on page 137
Basics Section for Sampler Tracks on page 133
Arranger Track Inspector on page 143

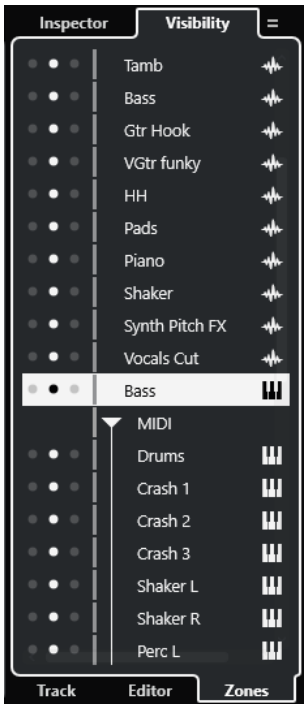
Basics Section for Marker Tracks on page 141
Signature Track Inspector on page 143
Tempo Track Inspector on page 142
Transpose Track Inspector on page 144
Video Track Inspector on page 146
Key Editor Inspector on page 824
Drum Editor Inspector on page 868
Sample Editor Inspector on page 473

Track Visibility

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

- To open the **Visibility** tab, click **Visibility** at the top of the left zone.





At the bottom of the **Visibility**, the following tabs are available:

Track

Allows you to show or hide individual tracks from the track list.

Zones

Allows you to determine and lock the position of certain **MixConsole** channels in the lower zone.

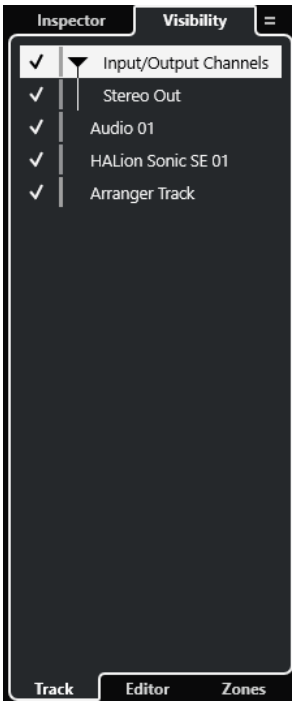
RELATED LINKS
Opening the MixConsole in the Lower Zone on page 64

Opening the Track Visibility

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

PROCEDURE

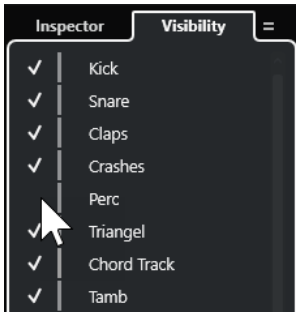
1. Click **Show/Hide Left Zone** on the **Project** window toolbar to activate the **Left Zone**.
2. At the top of the left zone, click the **Visibility** tab.
3. At the bottom of the left zone, click the **Track** tab.



RELATED LINKS
Showing/Hiding Individual Tracks on page 60

Showing/Hiding Individual Tracks

The **Visibility** tab shows a list of all the tracks of your project. You can show and hide individual tracks.



- To show/hide a track in the track list, check/uncheck it by clicking to the left of the track name.
- To activate/deactivate several tracks at the same time, select them and press **Return**.
- To show a hidden track exclusively, check it by **Shift**-clicking to the left of the track name.
- 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 using the **Visibility** tab, the channel corresponding to that track is also hidden in the **MixConsole** in the lower zone.
- To synchronize the track and the channel visibility in a separate **MixConsole** window, use the **Sync Visibility of Project and MixConsole** function.

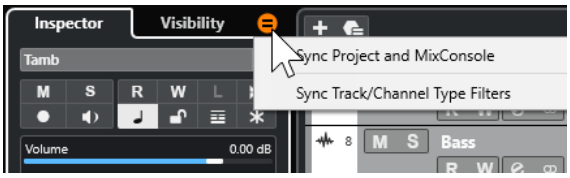
RELATED LINKS
Synchronizing Track and Channel Visibility on page 61

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 top of the left zone, select the **Visibility** tab.
2. At the bottom of the left zone, select 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 352

Opening the Project Window Zones Tab

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

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** opens in the lower zone.

RELATED LINKS

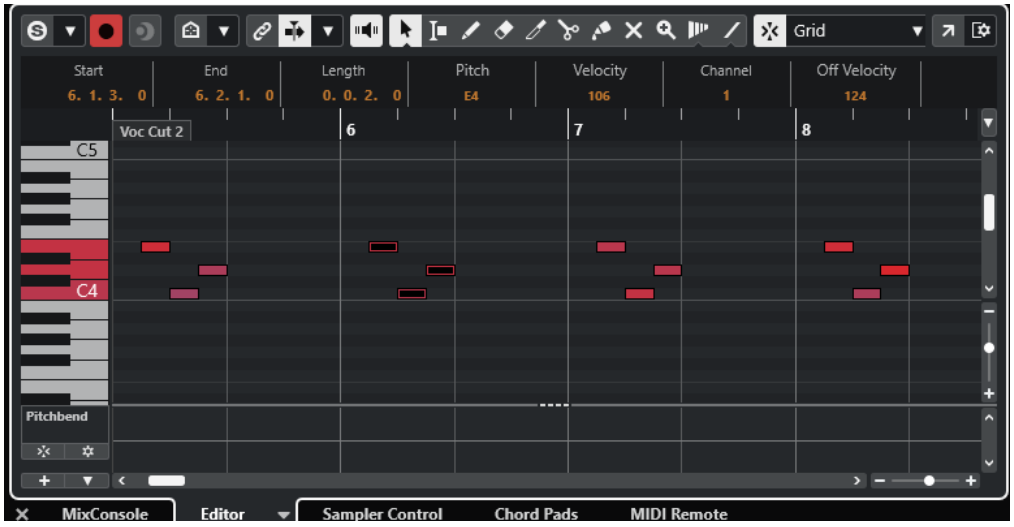
Opening the MixConsole in the Lower Zone on page 64

Project Window 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**, **MIDI Remote**, and **Editor**.



NOTE

You can show/hide specific tabs in the lower zone by right-clicking a tab and activating/deactivating the options in the **Set up Tabs** pane.

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

RELATED LINKS
Opening Chord Pads on page 64
Opening the MixConsole in the Lower Zone on page 64
Opening Sampler Control on page 65
Opening the Editor in the Lower Zone on page 66
Opening MIDI Remote in the Lower Zone on page 68
Project Window Toolbar on page 38
Setup Panes on page 1114

Setting up the Lower Zone Tabs

The lower zone shows the **Chord Pads**, the **Editor**, the **Sampler Control**, the **MixConsole**, and **MIDI Remote**. You can change the order of the tabs, and you can hide tabs that you do not need.

PROCEDURE

1. Right-click a tab header in the lower zone.

2. Do one of the following:
   - Activate/Deactivate the options to show/hide tabs in the lower zone.
   - Drag the items up or down in the list to change the order of the tabs.
   - Use the **Preset** menu to save a preset of your configuration.

RESULT

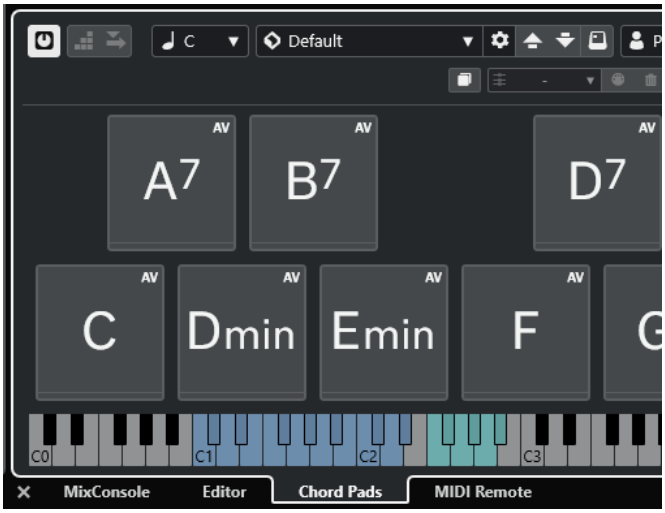
The tabs in the lower zone are shown, according to your configuration.

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

Using Chord Pads on page 947
Setting up the Lower Zone Tabs on page 63
Project Window Toolbar on page 38

Opening the MixConsole in the Lower Zone

The **MixConsole** in the lower zone allows you to perform all basic mixing procedures from within the lower zone of the **Project** window. At the same time, you 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 displayed in the lower zone.

RELATED LINKS

MixConsole in Lower Zone on page 346
Project Window Toolbar on page 38

Opening Sampler Control

Sampler Control allows you to 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
Sampler Tracks on page 559
Project Window Toolbar on page 38

Opening the Editor in the Lower Zone

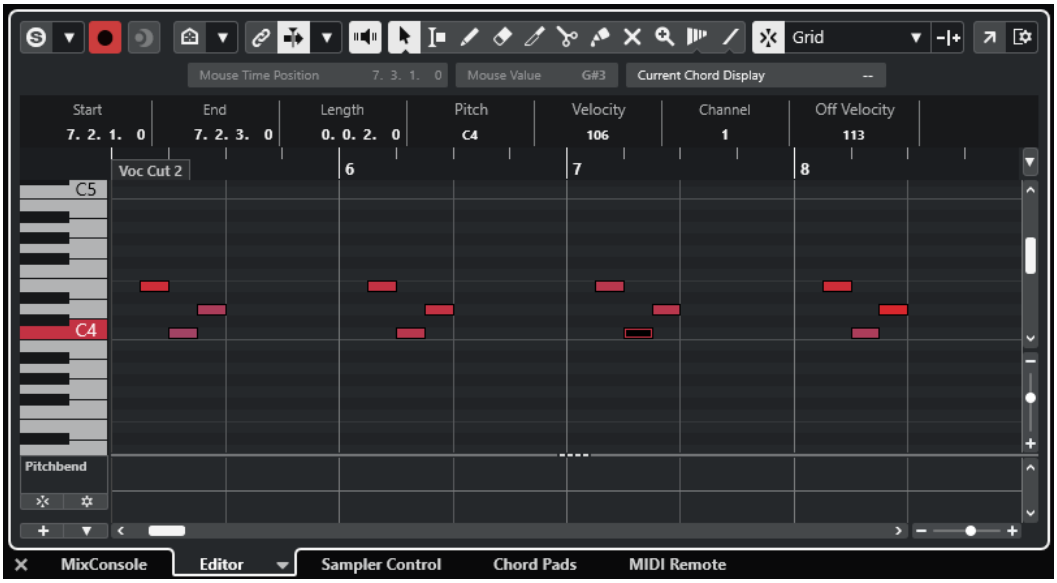
The **Editor** in the lower zone allows you to edit events from within the lower zone of the **Project** window. At the same time, you see the context of your tracks and events.

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 one of 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.

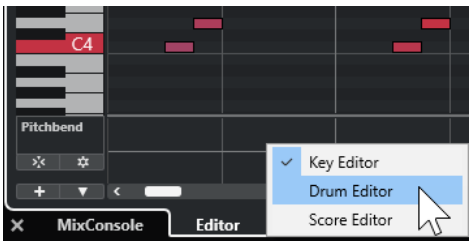
RELATED LINKS
Selecting a different MIDI Editor on page 67
Project Window Toolbar on page 38

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. You can do this without changing 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. The next time you open the MIDI part, the default MIDI editor is used.

Link Project and Lower Zone Editor Cursors

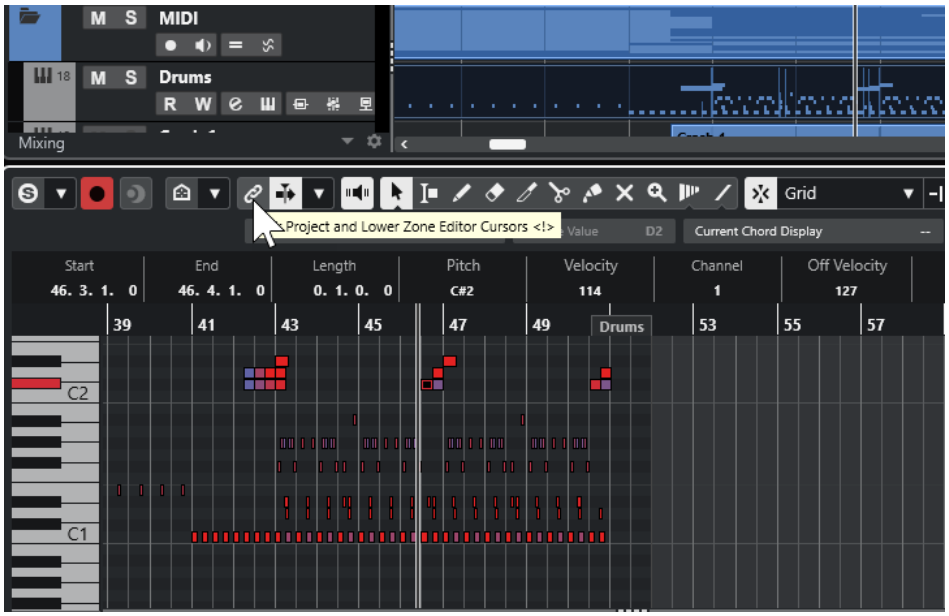
You can link cursors and zoom factors of the project zone as well as the **Key Editor**, **Drum Editor**, and the **Audio Part Editor** in the lower zone.

NOTE

Link Project and Lower Zone Editor Cursors is not available in the **Sample Editor**.

NOTE

The display format of the ruler is not affected by this function. You can still set the project zone ruler and the editor ruler in the lower zone to different display formats.



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 48
Ruler Display Format Menu on page 49
Zooming in the Project Window on page 76

Opening MIDI Remote in the Lower Zone

The **MIDI Remote** tab in the lower zone of the **Project** window allows you to load scripts for MIDI remote controllers. It shows a visual representation of the actual physical controller and its control mappings to Cubase parameters.

PROCEDURE

1. If the lower zone is not visible, 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 **MIDI Remote** tab.

RESULT

The **MIDI Remote** tab is opened in the lower zone.

NOTE

The **MIDI Remote** tab is not a clickable user interface. All operations are meant to be performed on the connected MIDI controller.

RELATED LINKS

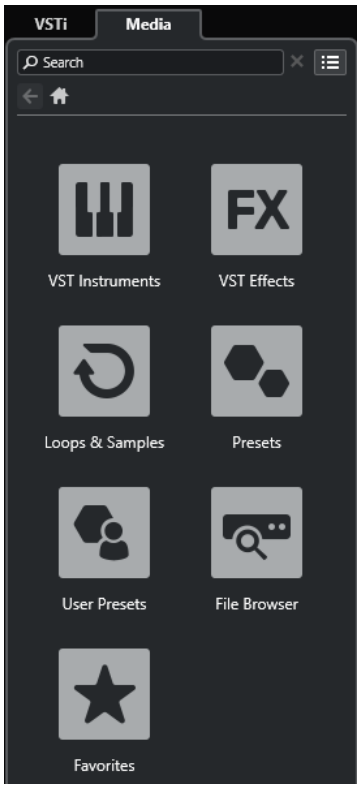
MIDI Remote on page 694

Project Window Right Zone

The right zone of the **Project** window allows you to display the **VSTi** rack and the **Media** rack.

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

The top of the right zone features the following tabs: **VSTi** and **Media**.



NOTE

You can show/hide specific tabs in the right zone by right-clicking a tab and activating/deactivating the options in the **Set up Tabs** pane.

RELATED LINKS
VSTi Rack in the Right Zone on page 71
Media Rack in the Right Zone on page 74
Project Window Toolbar on page 38
Setup Panes on page 1114

Opening the VSTi Rack in the Right Zone

You can open the **VSTi** rack 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 **VSTi** tab.

RESULT

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

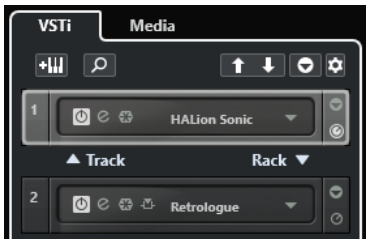
RELATED LINKS

VSTi Rack in the Right Zone on page 71
VST Instruments on page 664
Project Window Toolbar on page 38

VSTi Rack in the Right Zone

The **VSTi** rack in the right zone of the **Project** window allows 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:

Add Track Instrument

Opens the **Add Track** dialog that allows you to select an instrument and to add an instrument track that is associated with this instrument.

Find Instruments

Opens a selector that allows you to find a loaded instrument.

Set Remote-Control Focus for VST Quick Controls to Previous Instrument

Allows you to set the remote control focus to the previous instrument.

Set Remote-Control Focus for VST Quick Controls to Next Instrument

Allows you to set the remote control focus to the next instrument.

Show/Hide all VST Quick Controls

Shows/Hides the default quick controls for all loaded instruments.

Settings

Opens the **Settings** pop-up 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 Controls** remote control focus follows the track selection.

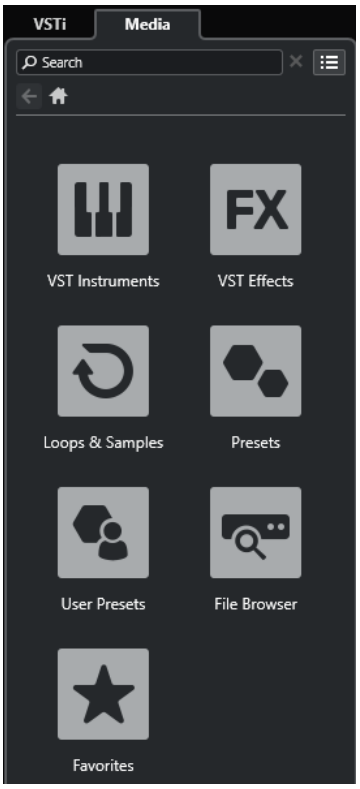
RELATED LINKS
VST Instruments Window on page 669

Opening the Media Rack in the Right Zone

You can show the **Media** rack 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, presets, or instruments into the **Project** window.

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 **Media** tab.



RESULT

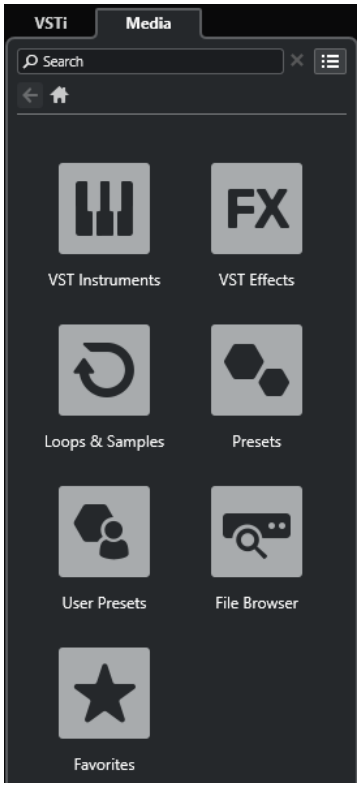
The **Media** rack is opened in the right zone of the **Project** window.

RELATED LINKS

Media Rack in the Right Zone on page 74
MediaBay and Media Rack on page 610
Project Window Toolbar on page 38

Media Rack in the Right Zone

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



The **Media** rack **Home** tab displays the following tiles:

VST Instruments

Shows all included VST instruments.

VST Effects

Shows all included VST effects.

Loops & Samples

Shows audio loops, MIDI loops, or instrument sounds ordered by content set.

Presets

Shows track presets, strip presets, pattern banks, FX chain presets, and VST FX presets.

User Presets

Shows track presets, strip presets, pattern banks, FX chain presets, VST FX presets, and instrument presets that are listed in the **User** folder.

Favorites

Shows your favorite folders and allows you to add new favorites. The favorites are automatically added to the **MediaBay** database.

File Browser

Shows your file system and the pre-defined folders **Favorites**, **This Computer**, **VST Sound**, **Factory Content**, and **User Content** where you can search for media files and access them immediately.

RELATED LINKS
Media Rack in Right Zone on page 610
MediaBay and Media Rack on page 610

Keyboard Focus in the Project Window

The different zones in the **Project** window can be controlled by key commands. For this to work, you must set the keyboard focus to the zone that you want to control by key commands.

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

- Project zone

  NOTE

  If you activate **Divide Track List**, the area of the project zone that has the focus is indicated by a highlighted and solid focus frame, whereas the non-active area is shown with a dashed frame.

- Channel tab
- 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 color in the **Preferences** dialog (**User Interface—Color Schemes** page).

RELATED LINKS
Project Zone on page 37
Channel Tab on page 52
Project Window Left Zone on page 54
Project Window Lower Zone on page 62
Project Window Right Zone on page 69
Project Window on page 35
Dividing the Track List on page 45

Activating Keyboard Focus for a Zone

You can activate the keyboard focus for a zone via mouse-click or 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 move 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

Keyboard Focus in the Project Window on page 75

Zooming in the Project Window

To zoom in the **Project** window, use the standard zoom techniques.

NOTE

If screen redraws are slow on your system, activate **Quick Zoom** in the **Preferences** dialog (**Editing—Zoom** page).

Zooming Horizontally

- Select the **Zoom** tool and click in the event display to zoom in. To zoom out, hold down **Alt/Opt** and click.
- Move the mouse pointer over the event display, hold down **Ctrl/Cmd**, and move the mouse wheel.
- Click **Horizontal Zoom Presets**, and from the menu, select an option.
- Use the horizontal zoom sliders to zoom in and out.
- Click the lower half of the ruler and drag down to zoom in horizontally. Click the lower half of the ruler and drag up to zoom out horizontally.
- Press **H** to zoom in horizontally. Press **G** to zoom out horizontally.

NOTE

If the **Grid Type** in the **Project** window toolbar is set to **Adapt to Zoom**, the horizontal zoom level affects the grid and snap resolution in the event display.

Zooming Vertically

- Select the **Zoom** tool, click in the event display, and drag a selection rectangle to zoom in vertically and horizontally.

NOTE

For this to work, you must deactivate the **Zoom Tool Standard Mode: Horizontal Zooming Only** option in the **Preferences** dialog (**Editing—Zoom** page).

- Move the mouse pointer over the event display, hold down **Ctrl/Cmd** + **Shift**, and move the mouse wheel.
- Click **Track Height Presets**, and from the menu, select an option.
- Use the vertical zoom sliders to zoom in and out. If you have made any individual track height adjustments, the relative height differences are maintained.
- Press **Shift** - **H** to zoom in vertically. Press **Shift** - **G** to zoom out vertically.

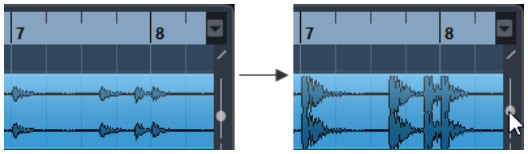
RELATED LINKS
Zoom Submenu on page 77
Horizontal Zoom Presets on page 78
Track Height Presets Menu on page 164
Zooming in on Cycle Markers on page 79
Zoom History on page 80
Link Project and Lower Zone Editor Cursors on page 67
Grid Type Menu on page 82

Zooming in on Audio Contents

You can zoom in vertically on the contents of audio parts and events. This is useful when viewing quiet audio passages.

PROCEDURE

- Click the waveform zoom slider in the top right corner of the event display and drag up.



RESULT

The contents of audio parts and events in your project are zoomed in vertically.

AFTER COMPLETING THIS TASK

To get an approximate reading on the level of the audio events by viewing the waveforms, zoom out by dragging the slider all the way down again. Otherwise, zoomed waveforms may be mistaken for clipped audio.

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

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 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

Zooms in to show the currently selected event. This option is available in the **Sample Editor** and in some MIDI editors.

Zoom In Vertically

Zooms in one step vertically.

Zoom Out Vertically

Zooms out one step vertically.

Zoom In Tracks

Zooms the selected tracks in one step vertically.

Zoom Out Tracks

Zooms the selected tracks out one step vertically.

Zoom Selected Tracks

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

Undo Zoom

These options allow you to undo the last zoom operation.

Redo Zoom

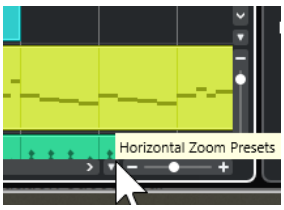
These options allow you to redo the last zoom operation.

RELATED LINKS
Zoom Submenu on page 480

Horizontal Zoom Presets

You can create horizontal zoom presets to set up different zoom settings. For example, you can create a preset that displays the entire project and a second preset with a high zoom factor for detailed editing. The **Horizontal Zoom Presets** pop-up menu allows you to select, create, and organize presets.

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



- To save the current zoom setting as a preset, open the **Horizontal Zoom Presets** pop-up menu and select **Add**. In the **Save Preset** dialog that opens, type in a name for the preset and click **OK**.
- To apply a preset, select it from the **Horizontal Zoom Presets** pop-up menu.
- To display the entire project, open the **Horizontal Zoom Presets** pop-up menu and select **Zoom Full**.

  This displays the project from the **Project Start Time** to the **Project Length**, as set in the **Project Setup** dialog.
- To delete a preset, open the **Horizontal 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 **Horizontal Zoom Presets** pop-up menu and select **Organize**. In the dialog that opens, select a preset from the list and click **Rename**. Type in a new name for the preset. Click **OK** to close the dialogs.

IMPORTANT

Once set, presets are available for all projects that you open or create.

RELATED LINKS
Zooming in the Project Window on page 76
Track Height Presets Menu on page 164

Zooming in on Cycle Markers

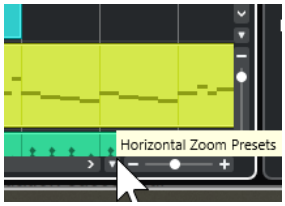
You can zoom in on the area between cycle markers in the project.

PREREQUISITE

You have created at least one cycle marker for the project.

PROCEDURE

- Click the button to the left of the horizontal zoom control to open the **Horizontal Zoom Presets** pop-up menu, and select a cycle marker.

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

RESULT

The event display is zoomed in to encompass the marker area.

RELATED LINKS
Markers Window on page 339

Zoom History

You can undo and redo zoom operations. This enables you to 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.
- To redo zoom, select **Edit** > **Zoom** > **Redo Zoom** or press **Alt/Opt** and double-click with the zoom tool.

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 **Snap** 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. Position the project cursor 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 485
Snap Point on page 484

Snap to Zero Crossing

Splitting and resizing of audio events can lead to sudden amplitude changes that might cause pops and clicks. To avoid this, 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 Menu

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

- To open the **Snap Type** pop-up menu, click **Snap Type** Grid on the toolbar.

The following snap types are available:

Grid

The snap points are set with the **Grid Type** pop-up menu. The options depend on the primary time format.

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

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

Grid Relative

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, with **Snap** set to **Grid Relative** and **Grid Type** 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 to dragging existing events or parts. When you create new events or parts, this **Snap Type** works like **Grid**.

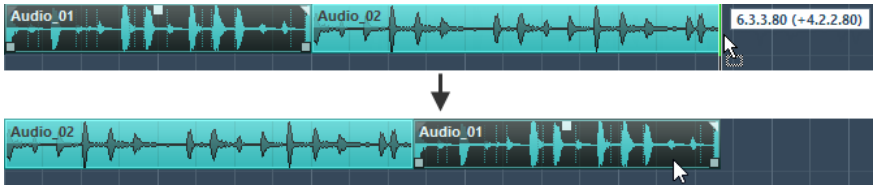
Events

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 the 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 change places.



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

Cursor

This grid type causes the project cursor to 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 **Cursor**.

Events + Cursor

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

Events + Grid + Cursor

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

RELATED LINKS

Selecting the Primary Time Format on page 246

Grid Type Menu

Allows you to specify a grid type that determines the grid and snap resolution in the event display.

NOTE

This setting only has an effect if **Snap Type** is set to one of the grid options.

- To open the **Grid Type** pop-up menu, click **Grid Type** on the toolbar.

If you select **Bars+Beats** as display format, the following grid types are available:

Bar
Sets the grid and snap resolution to bars.

Beat
Sets the grid and snap resolution to beats.

Use Quantize
Sets the grid and snap resolution to the value that is activated in the **Quantize Presets** pop-up menu.

Adapt to Zoom
Sets the grid and snap resolution to the horizontal zoom level. The more you zoom in on the event display, the finer the resolution. High zoom levels allow you to snap to 64th notes, low zoom levels allow you to snap to bars.

NOTE

Adapt to Zoom is only available if **Bars+Beats** is set as ruler display format.

NOTE

You can assign key commands to the grid types in the **Key Commands** dialog in the **Edit** category.

If you select **Seconds** as the display format, the following grid types are available:

1 ms
Sets the grid and snap resolution to 1 ms.

10 ms
Sets the grid and snap resolution to 10 ms.

100 ms
Sets the grid and snap resolution to 100 ms.

1000 ms
Sets the grid and snap resolution to 1000 ms.

If you select **Timecode** as the display format, the following grid types are available:

Subframe
Sets the grid and snap resolution to 1 subframe.

1/4 frame
Sets the grid and snap resolution to ¼ frame.

1/2 frame

Sets the grid and snap resolution to ½ frame.

1 frame

Sets the grid and snap resolution to 1 frame.

2 frames

Sets the grid and snap resolution to 2 frames.

1 second

Sets the grid and snap resolution to 1 second.

NOTE

If you activate this as a display format and **Show Timecode Subframes** is activated in the **Preferences** dialog (**Transport** page), the frames will also display subframes. There are 80 subframes per frame.

If you select **Samples** as the display format, the following grid types are available:

1 sample

Sets the grid and snap resolution to 1 sample.

10 samples

Sets the grid and snap resolution to 10 samples.

100 samples

Sets the grid and snap resolution to 100 samples.

44100 samples

Sets the grid and snap resolution to 44100 samples.

If you select **60 fps (user)** as the display format, the following grid types are available:

Subframe

Sets the grid and snap resolution to 1 subframe.

1/4 frame

Sets the grid and snap resolution to ¼ frame.

1/2 frame

Sets the grid and snap resolution to ½ frame.

1 frame

Sets the grid and snap resolution to 1 frame.

2 frames

Sets the grid and snap resolution to 2 frames.

1 second

Sets the grid and snap resolution to 1 second.

NOTE

If you activate this as a display format and **Show Timecode Subframes** is activated in the **Preferences** dialog (**Transport** page), the frames will also display subframes. There are 80 subframes per frame.

RELATED LINKS
Snap Types Menu on page 80
Zooming in the Project Window on page 76
Ruler Display Format Menu on page 49

Snap Grid

In the **Project** window, and in some of the editors, you can have events, parts, and ranges snap to the grid.

The grid is based on the following settings:

- **Primary time format**

  You can set the primary time format on the **Transport** panel.
- **Snap Type**

  You can select the **Snap Type** on the **Project** window toolbar.
- **Grid Type**

  You can select the **Grid Type** on the **Project** window toolbar.

The **Snap Type** pop-up menu allows you to determine if the events snap to the grid, to other events, or to the cursor.

NOTE

If you want your events to snap to the grid while you are editing, select one of the grid-related snap types, **Grid** or **Grid Relative**.

If you selected one of the grid-related snap types, the **Grid Type** pop-up menu on the **Project** window toolbar defines what the events snap to. The values that are shown depend on the primary time format:

- If you select **Bars+Beats** as a primary time format, you can select **Bar** or **Beat** as the **Grid Type** to snap your events to bars or beats. If you activate **Use Quantize** as the **Grid Type**, your events snap to the value that you set up in the **Quantize Presets** pop-up menu. If you activate **Adapt to Zoom** as the **Grid Type**, snapping depends on the zoom level.
- If you select **Seconds**, **Timecode**, **Samples**, or **fps (User)** as the primary time format, the **Grid Type** pop-up menu shows the corresponding values so that you can snap your events to time positions.

You can also set up a different grid in the following editors:

- **Key Editor**
- **Drum Editor**
- **List Editor**
- **Audio Part Editor**
- **Sample Editor**

NOTE

In the **Project** window and in the editors, the grid is represented by vertical grid lines in the event display. You can change the overlay intensity of the displayed grid lines by raising the **Grid Overlay Intensity** in the **Preferences** dialog (**Event Display** page).

RELATED LINKS
Snap Function on page 80
Project Setup Dialog on page 100
Ruler on page 48
Snap Types Menu on page 80
Ruler Modes on page 49
Selecting the Primary Time Format on page 246
Grid Type Menu on page 82

Cross-Hair Cursor

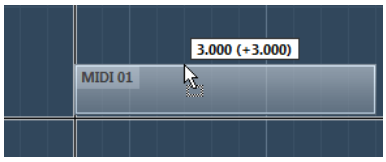
The cross-hair cursor is displayed when working in the **Project** window and in the editors, facilitating navigation and editing, especially for large projects.

- You can set up the cross-hair cursor in the **Preferences** dialog (**Editing—Tools** page).

  You can set up the colors for the line and the mask of the cross-hair cursor and define their 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 handles.

  Cross-hair cursor when moving an event.
- When the **Object Selection** tool, the **Split** 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 particular tools. The **Mute** tool, for example, does not use a cross-hair cursor, as you click on an event to mute it.

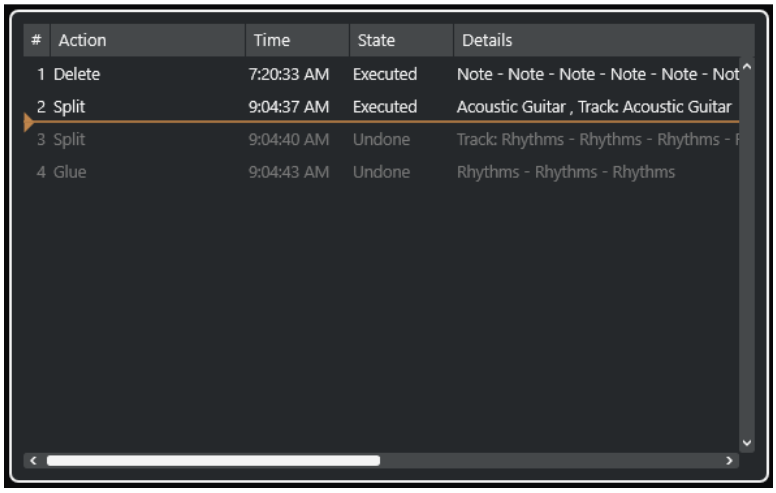
NOTE

If the **Key Editor**, the **Drum Editor** or the **Audio Part Editor** is open in the lower zone of the **Project** window and if **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 lists all your edits. This allows you to undo any actions in the **Project** window as well as in the editors.

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



Action

Shows the name of the action.

Time

Shows the time when this action was performed.

State

Shows the state of the action.

Details

Shows further details, and allows you to enter new text.

Separator

Move the separator upwards to undo your actions. To redo an action, move the separator down.

NOTE

- You can also undo applied audio processes. However, we recommend to use **Direct Offline Processing** window to modify or delete plug-in effects or audio processes.
- Offline processing that you have applied permanently to the audio via the **Make Direct Offline Processing Permanent** function cannot be undone. Therefore, it is not shown in the **Edit History** dialog.
- **Sampler Control** offers its own 20-step edit history for sampler tracks. Edits in **Sampler Control** are not available via the **Edit History** dialog.

RELATED LINKS

Direct Offline Processing on page 435
Applying Offline Processing Permanently on page 441
Sample Editing and Playback Functions on page 581

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. In the **Preferences** dialog, select **General**.

2. Set the number in the **Maximum Undo Steps** field.

Color Handling

You can colorize events and tracks in Cubase. This contributes to an easier overview in the **Project** window.

RELATED LINKS
Color Picker on page 93
Project Colors Setup Dialog on page 90
Event Colors Menu on page 780
Setting Event Colors to Track Colors on page 90
Colorizing Events on the Fly on page 89
Colorizing Selected Events or Parts on page 89
Resetting the Track Color on page 88
Colorizing Single Tracks on page 88
Colorizing Selected Tracks on page 87
Color Handling on page 87
User Interface - Track & MixConsole Channel Colors on page 1149
Automatically Assigning Colors to New Tracks/Channels on page 161

Colorizing Selected Tracks

You can colorize selected tracks.

PROCEDURE

1. In the **Project** window, deselect all events or parts.
2. Select the tracks that you want to colorize.
3. On the **Project** window toolbar, select **Select Color for Selected Tracks or Events**.
   The **Colorize** pane opens.

   NOTE

   If you want to select colors by names, activate the **Select Colors by Name** option in the **Project Colors Setup** dialog (**Options** page).
4. Select a color.

RESULT

The selected tracks are colorized, and the events and parts get the track color.

NOTE

If you assign a different color to individual events or parts with the **Color** tool, events or parts no longer follow color changes of the track.

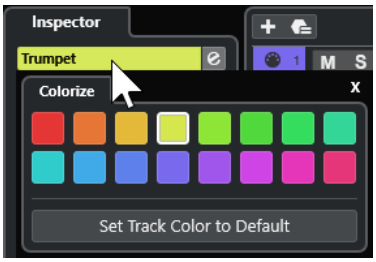
RELATED LINKS
Colorizing Events on the Fly on page 89
Project Colors Setup Dialog on page 90
Options Tab on page 93

Colorizing Single Tracks

You can colorize single tracks via the **Inspector** or the track list. This is useful if you want to ensure that no other tracks, events, or parts are colorized accidentally.

PROCEDURE

1. Do one of the following:
   - Select the track that you want to colorize, and **Alt/Opt**-click the header of the basic track **Inspector** section.

   - **Alt/Opt**-click the left area of the track list.

   The **Colorize** pane opens.

   NOTE

   If you want to select colors by names, activate the **Select Colors by Name** option in the **Project Colors Setup** dialog (**Options** page).

2. Select a color.

RESULT

The track is colorized, and any events or parts on that track get the same color.

NOTE

If you assign a different color to individual events or parts with the **Color** tool, they no longer follow color changes of the track.

RELATED LINKS

Colorizing Events on the Fly on page 89
Options Tab on page 93

Resetting the Track Color

You can reset the color of a track to the default color.

PROCEDURE

1. In the **Project** window, select the track that you want to reset to the default color, and deselect all events or parts.
2. On the **Project** window toolbar, select **Select Color for Selected Tracks or Events**.
3. In the **Colorize** pane, click **Set Track Color to Default**.

RESULT

The default color is assigned to the selected track.

Colorizing Selected Events or Parts

You can colorize selected events or parts with **Select Color for Selected Tracks or Events**. By default, events or parts follow the color of the corresponding track. However, you can overwrite this setting and, for example, select the same color for events or parts that reside on different tracks.

PROCEDURE

1. In the **Project** window, select all events or parts that you want to colorize.
2. On the **Project** window toolbar, select **Select Color for Selected Tracks or Events**.

   The **Colorize** pane opens.

   NOTE

   If you want to select colors by names, activate the **Select Colors by Name** option in the **Project Colors Setup** dialog (**Options** page).
3. Select a color.

RESULT

The selected events are colorized and no longer follow the color changes of the track.

RELATED LINKS

Colorizing Events on the Fly on page 89
Options Tab on page 93
Event Colors Menu on page 780

Colorizing Events on the Fly

You can colorize events or parts with the **Color** tool. By default, events or parts follow the color of the corresponding track. However, you can overwrite this setting and, for example, select the same color for events or parts that reside on different tracks.

PROCEDURE

1. In the **Project** window toolbar, select the **Color** tool.
2. Do one of the following to select a tool color:
   - **Alt/Opt**-click an event or part to copy its color.
   - Move the mouse pointer over the **Color** tool, and use the mouse wheel to step through the colors of the current color set.
3. Optional: Select the events or parts that you want to colorize with the **Object Selection** tool.

   This is only necessary if you want to colorize multiple events or parts.
4. On the **Project** window toolbar, select the **Color** tool.
5. Click the events or parts that you want to colorize.

RESULT

The events or parts are colorized and no longer follow color changes of the track.

NOTE

You can also **Ctrl/Cmd**-click an event or part with the **Color** tool to open the **Choose Event Color** pane or to select colors by names.

RELATED LINKS
Colorizing Selected Events or Parts on page 89
Options Tab on page 93
Event Colors Menu on page 780

Setting Event Colors to Track Colors

You can set the color of events or parts to the track color. This is useful if you previously colorized events or parts with the **Color** tool and you want them to follow the track color again.

PROCEDURE

1. In the **Project** window, select the event or part that you want to set to the track color.
2. On the **Project** window toolbar, click **Select Color for Selected Tracks or Events**.
3. In the **Colorize** pane, click **Set Event Color to Track**.

RESULT

The track color is assigned to the selected event or part.

RELATED LINKS
Colorizing Events on the Fly on page 89
Event Colors Menu on page 780

Project Colors Setup Dialog

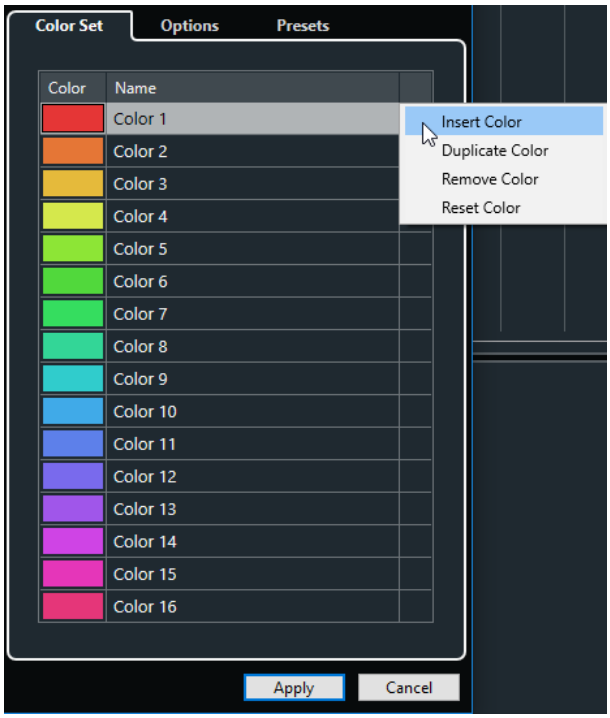
The **Project Colors Setup** dialog allows you to set up colors for your project.

- To open the **Project Colors Setup** dialog, select **Project** > **Project Colors Setup**.

RELATED LINKS
Color Picker on page 93
Color Set Tab on page 91
Presets Tab on page 92
Options Tab on page 93

Color Set Tab

The **Color Set** tab allows you to change the color set that is used in the project.



The following options are available:

Color fields

Click a field to open the **Color Picker** and specify a new color.

Name

Shows the name of the color. Double-click to change it.

Set up

Allows you to add or remove color fields.

- **Insert Color**

  Adds a new color field.
- **Duplicate Color**

  Duplicates the selected color field.
- **Remove Color**

  Removes the selected color field.
- **Reset Color**

  Resets the selected color field to the factory settings.

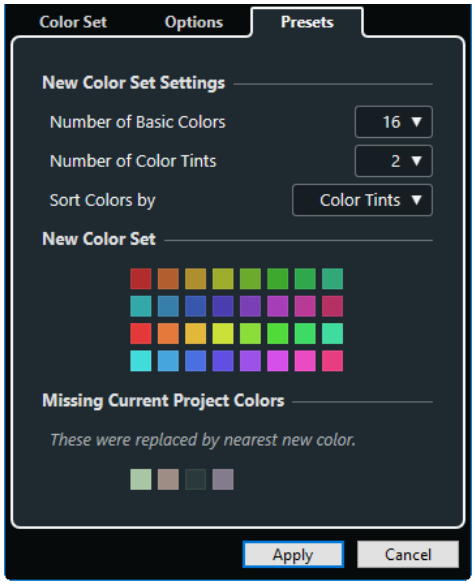
Apply

Applies your changes and closes the dialog.

RELATED LINKS
Color Picker on page 93

Presets Tab

The **Presets** tab allows you to expand the color set to 24 or even 32 colors or to reduce it to 8 colors. You can add tints, and you can sort colors according to their color tint or their basic color.



In the **New Color Set Settings** section, the following options are available:

Number of Basic Colors

You can set up 8, 16, 24, or 32 basic colors.

Number of Color Tints

You can set up 1, 2, or 4 color tints.

Sort Colors by

Allows you to sort the colors of the color set by their basic color or by their color tint.

The **New Color Set** section displays the current colors of the new color set.

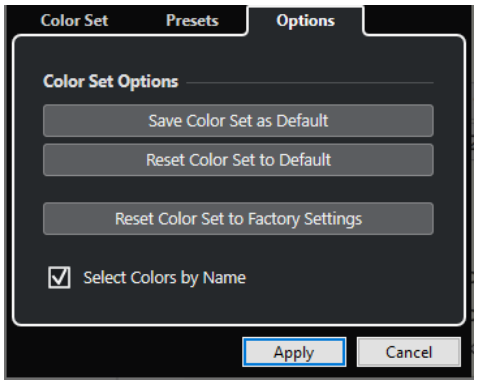
The **Missing Current Project Colors** section shows which missing colors are replaced. Move the mouse pointer over the color field of a missing color to highlight the color that is used to replace it in the **New Color Set** section.

Apply

Applies your changes and closes the dialog.

Options Tab

The **Options** tab allows you to access the color set options.



In the **Color Set Options** section, the following options are available:

Save Color Set as Default

Saves the current set of colors as default.

Reset Color Set to Default

Applies the default set of colors.

Reset Color Set to Factory Settings

Returns to the standard color palette.

Select Colors by Name

Allows you to select colors by name.

Apply

Applies your changes and closes the dialog.

Color Picker

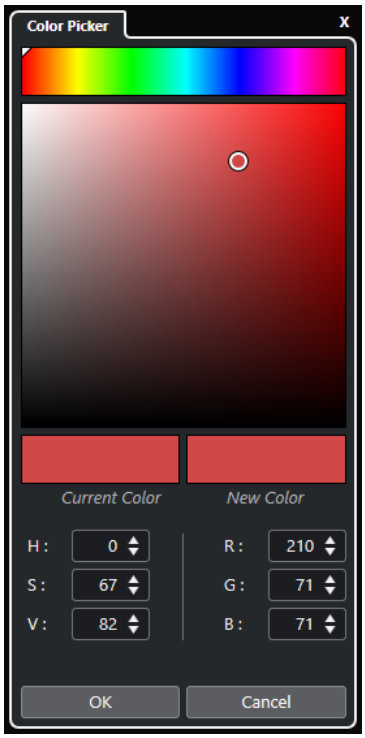
The **Color Picker** allows you to define new custom colors.

To open the **Color Picker**, do one of the following:

- Select **Project** > **Project Colors Setup**, and, in the **Project Colors Setup** dialog on the **Color Set** tab, click a color field.

  This allows you to define custom project colors.
- Select **Edit** > **Preferences**, select one of the **User Interface** entries, and click a color field.

  This allows you to define custom user interface colors.



Color selectors

Allow you to select a color shade and the nuance of the shade.

Context menu

Allows you to copy, paste, or reset colors.

Current Color/New Color

Shows the current color and the new color.

Hue/Saturation/Value

Allows you to edit the colors numerically.

Red/Green/Blue

Allows you to edit the colors numerically.

OK

Confirms the color changes.

NOTE

You must restart the application for some changes to take effect.

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**.

   The **Hub** 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

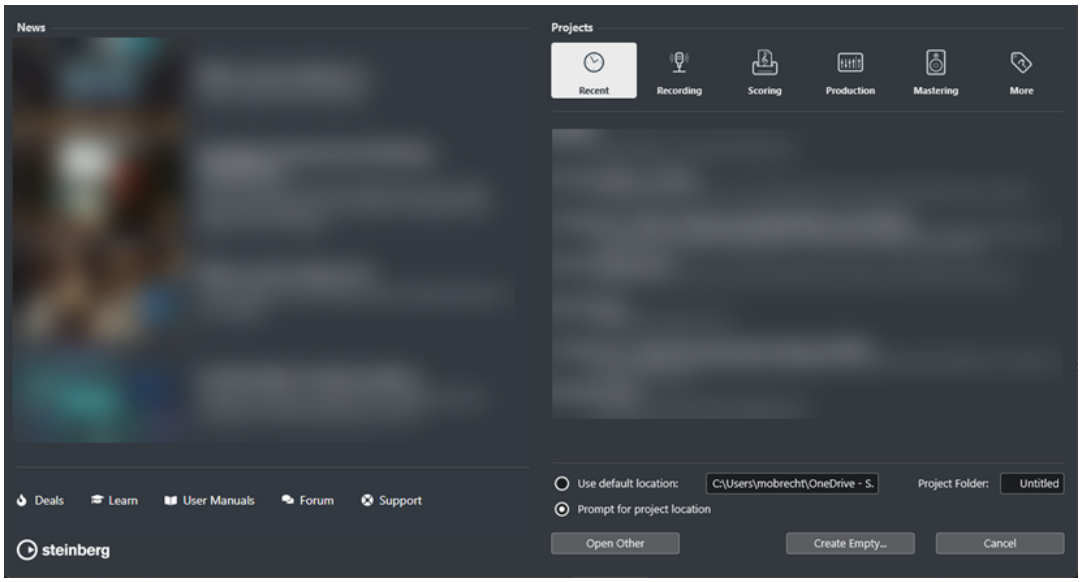
Cubase Hub on page 95
Presets for Input and Output Busses on page 32

Cubase Hub

The Cubase **Hub** keeps you up to date with the latest information and assists you with organizing your projects.

To open the Cubase **Hub**, do one of the following:

- Select **Hub** > **Open Hub**.
- Select **File** > **New Project**.



News Section

The **News** section displays Steinberg news as well as links to interesting deals, video tutorials, the user manuals, the user forum, and the support.

NOTE

- Make sure that you have an active Internet connection to access this material.
- You can show/hide this section by activating/deactivating **Show News in Hub** option in the **Preferences** dialog (**General** page).

Projects Section

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

Category bar

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

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

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

Allows you to open any project file on your system.

NOTE

This is identical to using the **Open** command on the **File** menu.

Create Empty

Allows you to create a new empty project.

Cancel

Closes the **Hub**. This button is only available if projects are opened in Cubase (Windows only).

Quit Cubase (Windows only)

Closes Cubase. This button is only available if no project is opened.

RELATED LINKS
General on page 1138

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 in the project folder.

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

- Audio
- Edits
- Images
- Track Pictures

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.

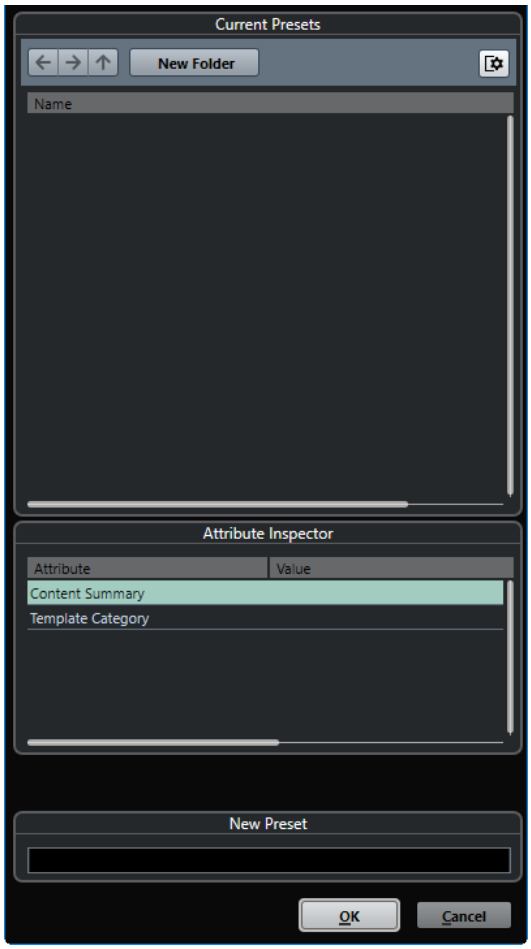
Template projects are not saved in project folders. Therefore, they contain no subfolders and no media files.

- 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** (macOS only).

Save As Template Dialog

The **Save As Template** dialog allows you to save projects as templates.

- To open the **Save As Template** dialog, select **File** > **Save As Template**.



The following options are available in the **Current Presets** section:

New Folder

Allows you to add a folder to the template list.

Template list

Lists the templates and the folders.

The following options are available in the **Attribute Inspector** section:

Value

Click this field to enter a description for the **Content Summary** attribute or to select a template category for **Template Category** attribute.

The following options are available in the **New Preset** section:

New Preset

Allows you to enter a name for the new project template.

Show Attribute Inspector

Allows you to show/hide the **Attribute Inspector**.

Saving a Project Template File

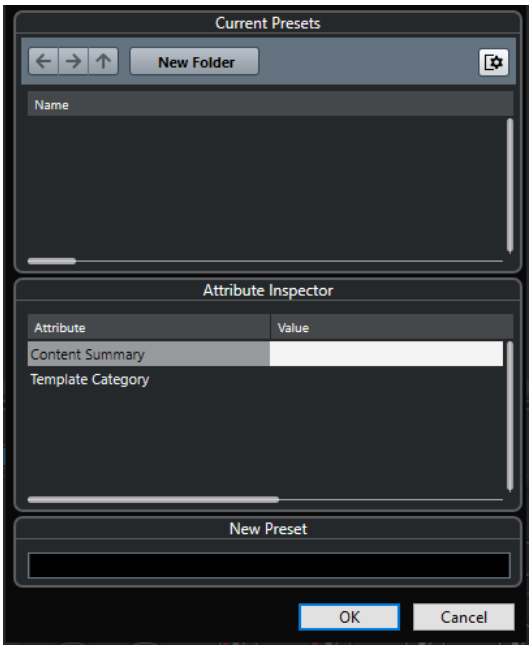
You can save the current project as a template. When you create a new project, you can select this template as a starting point.

PREREQUISITE

You have removed all clips from the **Pool**. 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**, as part of the **More** category.
6. Click **OK** to save the template.

RELATED LINKS

Pool on page 588

Renaming Templates

You can rename template files from within the **Hub**.

PROCEDURE

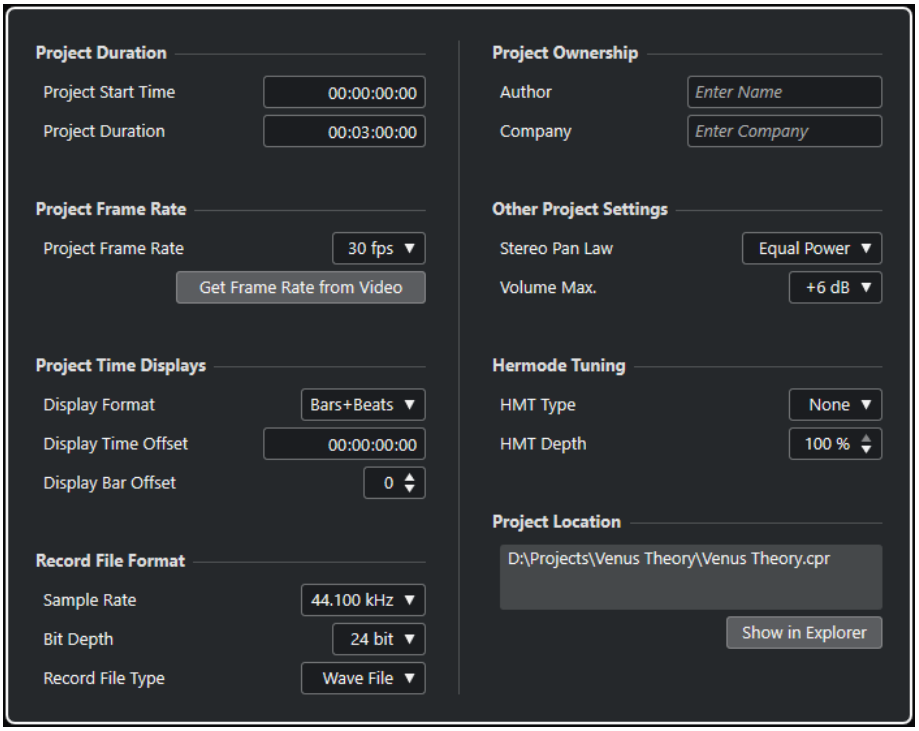
1. In the **Hub**, right-click a template and select **Rename**.

2. In the **Rename** dialog, enter a new name and click **OK**.

Project Setup Dialog

The **Project Setup** dialog allows you to make general settings for your project.

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



IMPORTANT

While you can change most **Project Setup** settings at any time, you must set the sample rate right 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 ensure that they play back properly.

In the **Project Duration** section, the following options are available:

Project Start Time

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.

Project Duration

Allows you to specify the duration of the project.

Project Frame Rate

In the **Project Frame Rate** section, the following options are available:

Project Frame Rate

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

Get Frame Rate From Video

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

Project Time Displays

In the **Project Time Displays** section, the following options are available:

Display Format

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

Display Time Offset

Allows you to specify an offset for the time positions in the rulers and position displays to compensate for the **Project Start Time** setting.

Display Bar Offset

This setting is only used in conjunction with the **Bars+Beats** display format. Allows you to specify an offset for the time positions in the rulers and position displays to compensate for the **Project Start Time** setting.

Record File Format

In the **Record File Format** section, the following options are available:

Sample Rate

Allows you to specify the sample rate at which Cubase 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 ensure that 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 Depth

Allows you to specify the bit depth of the audio files that you record in Cubase. Select the record format according to the bit depth that is delivered by your audio hardware. The available options are 16 bit, 24 bit, 32 bit, 32 bit float, and 64 bit float.

NOTE

- If your audio interface supports a bit depth of 32 bit and you want to maintain this precision in your recordings, select a **Processing Precision** of 64 bit float in the **Studio Setup** dialog.
- When you record with effects, consider setting the bit depth to 32 bit float or 64 bit float. This prevents clipping (digital distortion) in the recorded files and keeps the audio quality very high. Effect processing and level or EQ changes in the input channel are performed in 32-bit float or 64-bit float format, depending on the **Processing Precision** setting in the **Studio Setup** dialog. If you record at 16 bit

or at 24 bit, the audio is converted to this lower bit depth when it is written to a file. As a result, the signal may degrade. This is independent of the actual bit depth of your audio hardware. Even if the signal from the audio hardware has a bit depth of 16 bit, the signal is 32 bit float or 64 bit float after the effects are added to the input channel.

- The higher the bit depth value, the larger the files and the more strain is put on the disk system. If this is an issue, lower the record format setting.

Record File Type

Allows you to specify the file type of the audio files that you record in Cubase.

NOTE

- For wave file recordings larger than 4 GB, the EBU RIFF standard is used. If you use a FAT 32 disk (not recommended), audio files are split automatically. In the **Preferences** dialog, you can specify what happens if your recorded Wave file is larger than 4 GB.
- You can set up embedded strings in the **Preferences** dialog.

Project Ownership

In the **Project Ownership** section, 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 of the **Preferences** dialog (**General—Personalization** page).

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 in the **Preferences** dialog (**General—Personalization** page).

Other Project Settings

In the **Other Project Settings** section, the following options are available:

Stereo Pan Law

If you pan a channel left or right, the sum of the left and the 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 created with Cubase versions older than 5.5, this value is set to the old default value of +6 dB.

Hermode Tuning

In the **Hermode Tuning** section, the following options are available:

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.

Project Location

In the **Project Location** section, the following options are available:

Project Location information

Displays the project location.

Show in Explorer/Reveal in Finder

Opens a file dialog that shows the location of the project file.

RELATED LINKS
Audio System Page on page 18
Hermode Tuning on page 753
Record - Audio on page 1145

Opening Project Files

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

IMPORTANT

If you open a project saved with a different program version and it 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 (**General** page).
- External projects are automatically connected to the input and output busses. If you open a project created on a computer with an ASIO port configuration that differs 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 (**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 is already 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 1115
Do Not Connect Input/Output Busses When Loading External Projects on page 1150
Activating Projects on page 104

Activating Projects

In Cubase you can have several projects opened at the same time. However, 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. To work on another project, activate the other project.

PROCEDURE

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

  NOTE

  If you close the active project, you must activate another open project manually, as Cubase cannot automatically activate one of the other open projects.

Opening Recent Projects

You can open recent projects from the recent projects list.

PROCEDURE

- Do one of the following:
  - In the category bar of the **Hub**, click **Recent**, select a project from the projects list, and click **Open**.
  - In Cubase, 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 on your system.

NOTE

To improve the search for matching audio inputs and outputs for the input/output busses, 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 to 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**.

Auto Save

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

NOTE

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

Cubase can automatically save backup copies of all open projects with unsaved changes. To set this up, activate the **Auto Save** option in the **Preferences** dialog (**General** page). 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.

PROCEDURE

- Do one of the following:
  - Select **File** > **Save New Version**.
  - Press **Ctrl/Cmd** - **Alt/Opt** - **S**.

RESULT

The new file is saved under the same name as the original project, with an incremental number attached to it. 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 made.

PROCEDURE

1. Select **File** > **Revert**.
2. In the warning message, click **Revert**.

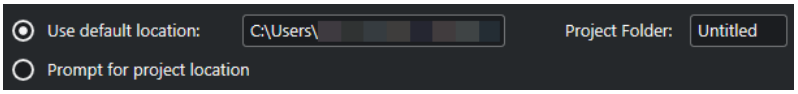
   If you have recorded or created new audio files since the last version was saved, you are prompted to delete or keep the files.

Choosing a Project Location

You can specify a project location for saving projects in the **Hub**.

PROCEDURE

1. Do one of the following:
   - Select **Use default location** to create a project in the default project location. In the **Project folder** field, 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`.

   - Click in the path field to change the default project location. Specify the new default location in the file dialog that opens.
   - Activate **Prompt for project location** to open a file dialog where you can specify the project folder location.
2. Do one of the following:
   - Click **Create Empty** to create a new empty project.
   - Select one of the template projects and click **Create** to create a project based on a template.

RESULT

The project is created and saved in the specified location.

Self-Contained Projects

To share your work or to 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.

RELATED LINKS

Preparing Archives on page 106
Backing up Projects on page 107

Preparing Archives

The **Prepare Archive** function allows you to gather all files that are referenced by your project and to ensure that they 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 to copy them to your working directory.
2. Click **Proceed**.

External audio files are copied to the **Audio** folder of your project. Video files are copied to the project root folder.

RESULT

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

Backing up Projects

You can create a backup copy of your project. Backups only contain the necessary work data. All media files, except for 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 changes 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.

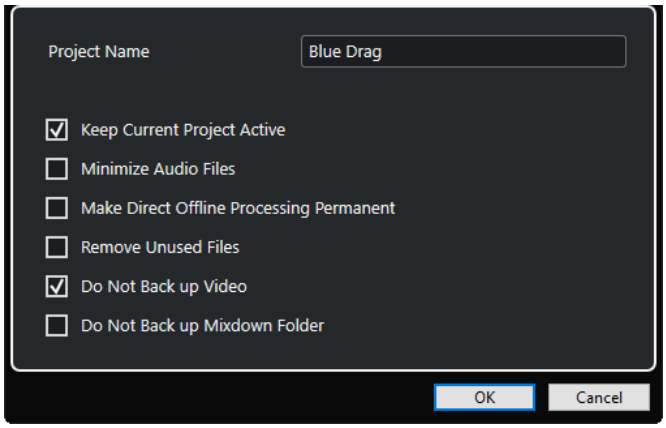
NOTE

VST Sound content provided by Steinberg is copy-protected and is not 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

The **Back up Project Options** 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.

Make Direct Offline Processing Permanent

Allows you to flatten all edits and to apply all processing and effects permanently 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 from the video track or from the **Pool** of the current project.

Do Not Back up Mixdown Folder

Allows you to exclude the **Mixdown** folder of your project from the backup.

RELATED LINKS

Export Audio Mixdown Dialog on page 1044

Tracks and Channels

Tracks are the building blocks of your project. They allow you to import, add, record, and edit parts and events. Tracks are listed from top to bottom in the track list and extend horizontally across the **Project** window. Channels can be shown for all audio-related and MIDI-related tracks.

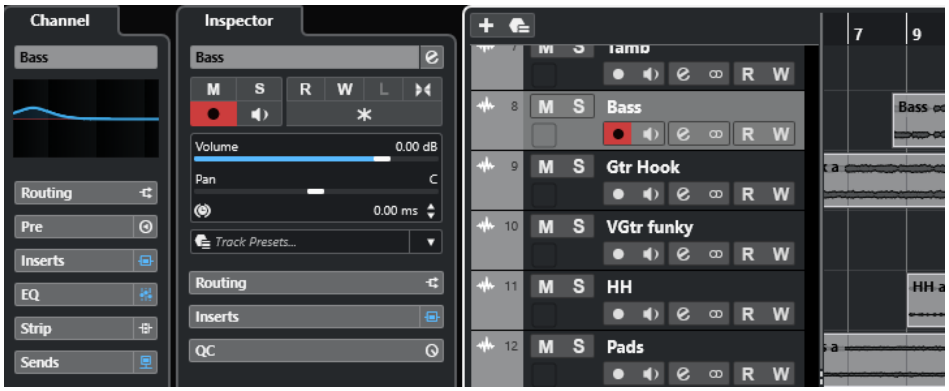
Tracks

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

A full overview of all added tracks listed from top to bottom is shown in the track list.

Channels

All audio-related and MIDI-related tracks, that is, audio tracks, instrument tracks, sampler tracks, group channel tracks, FX channel tracks, and MIDI tracks are assigned to a particular channel that can be displayed on the **Channel** tab. The **Channel** tab represents a **MixConsole** channel, and the handling and usability is similar. The **Channel** tab, however, shows only the sections that correspond to the channel of the selected track.



A full overview of the corresponding audio-related and MIDI-related channels listed from left to right is provided in the **MixConsole**.

RELATED LINKS

Track Inspector Sections on page 130
Channel Sections on page 147

Channel Tab on page 52
Project Window Left Zone on page 54
Inspector on page 55
MixConsole on page 346

Audio Tracks and Channels

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

You can add audio tracks via the **Add Track** dialog.

RELATED LINKS
Add Track Dialog – Audio on page 110

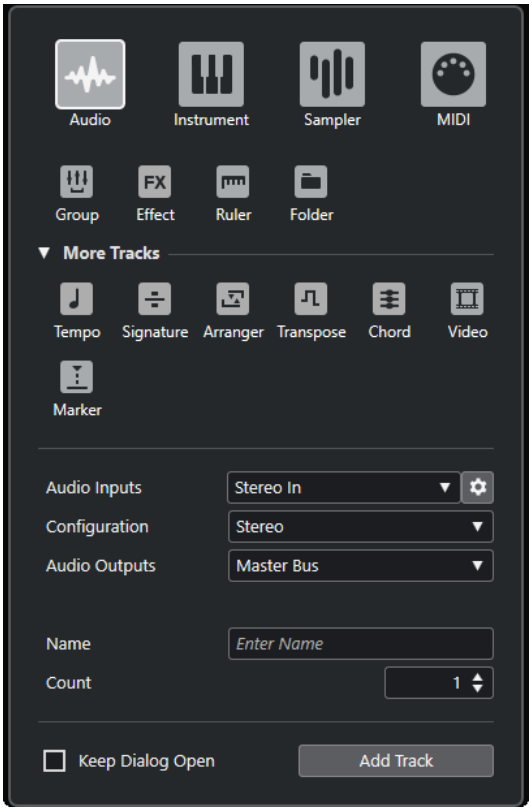
Add Track Dialog – Audio

The **Audio** page of the **Add Track** dialog allows you to set up and add audio tracks.

To open the **Audio** page of the **Add Track** dialog, do one of the following:

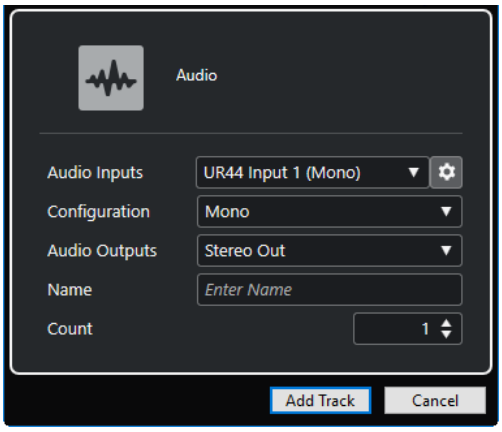
- Click **Add Track** in the global track controls area of the track list, and click **Audio**.

  This opens the global **Add Track** dialog on the **Audio** page.



- Select **Project** > **Add Track** > **Audio** or right-click in an empty area of the track list, and select **Add Audio Track**.

  This opens the **Audio** page of the **Add Track** dialog.



The following settings are available:

Audio Inputs

Opens a window where you can select an input of your connected audio hardware.

If you have added an input bus in the **Audio Connections** window, you can connect to that input bus.

The **Open Audio Connections** button opens the **Audio Connections** window.

Configuration

Allows you to set the channel configuration. Audio-related tracks can be configured as mono or stereo tracks.

Audio Outputs

Allows you to set the output routing.

Name

Allows you to specify a track name.

Count

Allows you to enter the number of tracks that you want to add.

NOTE

You can add an unlimited number of tracks. However, you can only add 100 tracks at a time.

Keep Dialog Open

Activate this to keep the dialog open after clicking **Add Track**. This allows you to click the page of another track type to set up and add more tracks.

NOTE

This is only available if you open the **Add Track** dialog from the global track controls.

Add Track

Adds one or more tracks, according to the track type and the settings of the active page, and closes the dialog.

RELATED LINKS

Audio Connections Window on page 29

Instrument Tracks and Channels

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

You can add instrument tracks via the **Add Track** dialog.

RELATED LINKS
Add Track Dialog – Instrument on page 112

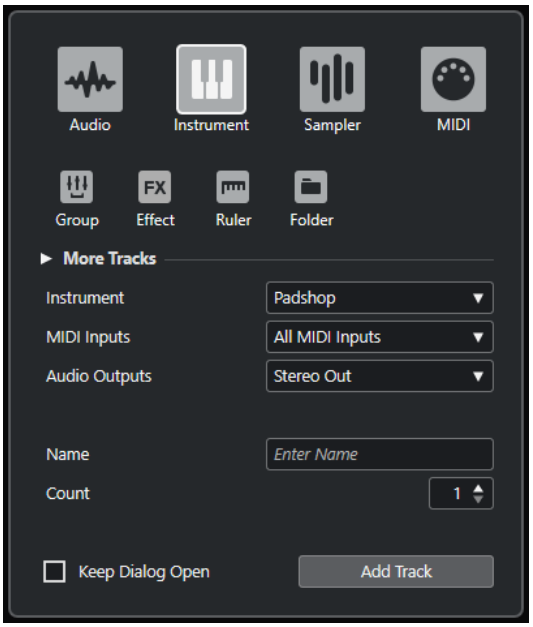
Add Track Dialog – Instrument

The **Instrument** page of the **Add Track** dialog allows you to set up and add instrument tracks.

To open the **Instrument** page of the **Add Track** dialog, do one of the following:

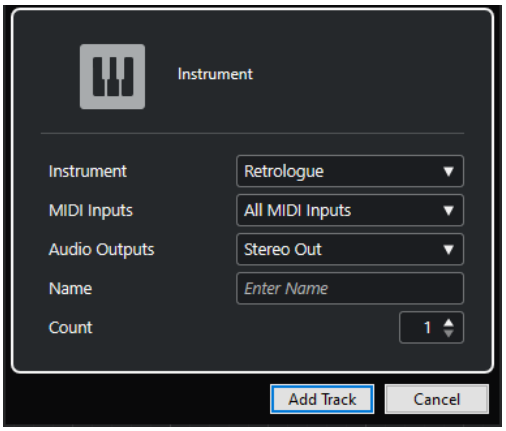
- Click **Add Track** in the global track control area of the track list, and click **Instrument**.

  This opens the global **Add Track** dialog on the **Instrument** page.



- Select **Project** > **Add Track** > **Instrument** or right-click in an empty area of the track list, and select **Add Instrument Track**.

  This opens the **Instrument** page of the **Add Track** dialog.



The following settings are available:

Instrument
Allows you to select an instrument.

MIDI Inputs
Allows you to set the MIDI inputs.

Audio Outputs
Allows you to set the output routing.

Name
Allows you to specify a track name.

Count
Allows you to enter the number of tracks that you want to add.

NOTE

You can add an unlimited number of tracks. However, you can only add 100 tracks at a time.

Keep Dialog Open
Activate this to keep the dialog open after clicking **Add Track**. This allows you to click the page of another track type to set up and add more tracks.

NOTE

This is only available if you open the **Add Track** dialog from the global track controls.

Add Track
Adds one or more tracks, according to the track type and the settings of the active page, and closes the dialog.

Sampler Tracks and Channels

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

You can add sampler tracks via the **Add Track** dialog.

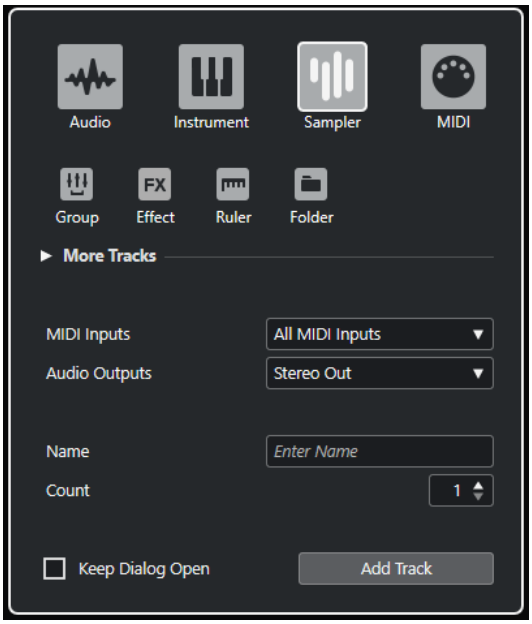
RELATED LINKS
Add Track Dialog – Sampler on page 113
Creating Sampler Tracks on page 560
Sampler Control on page 561

Add Track Dialog – Sampler

The **Sampler** page of the **Add Track** dialog allows you to set up and add sampler tracks.

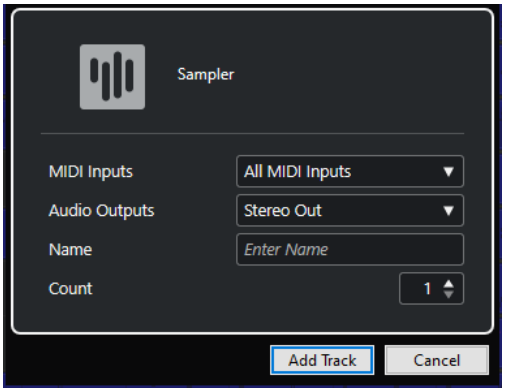
To open the **Sampler** page of the **Add Track** dialog, do one of the following:

- Click **Add Track** in the global track control area of the track list, and click **Sampler**.
  This opens the global **Add Track** dialog on the **Sampler** page.



- Select **Project** > **Add Track** > **Sampler** or right-click in an empty area of the track list, and select **Add Sampler Track**.

  This opens the **Sampler** page of the **Add Track** dialog.



The following settings are available:

MIDI Inputs

Allows you to set the MIDI inputs.

Audio Outputs

Allows you to set the output routing.

Name

Allows you to specify a track name.

Count

Allows you to enter the number of tracks that you want to add.

Keep Dialog Open

Activate this to keep the dialog open after clicking **Add Track**. This allows you to click the page of another track type to set up and add more tracks.

NOTE

This is only available if you open the **Add Track** dialog from the global track controls.

Add Track

Adds one or more tracks, according to the track type and the settings of the active page, and closes the dialog.

MIDI Tracks and Channels

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

You can add MIDI tracks via the **Add Track** dialog.

RELATED LINKS
Add Track Dialog – MIDI on page 115

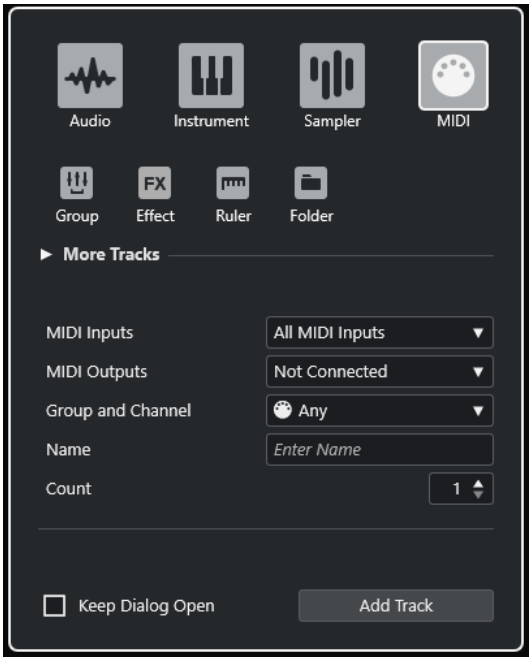
Add Track Dialog – MIDI

The **MIDI** page of the **Add Track** dialog allows you to set up and add MIDI tracks.

To open the **MIDI** page of the **Add Track** dialog, do one of the following:

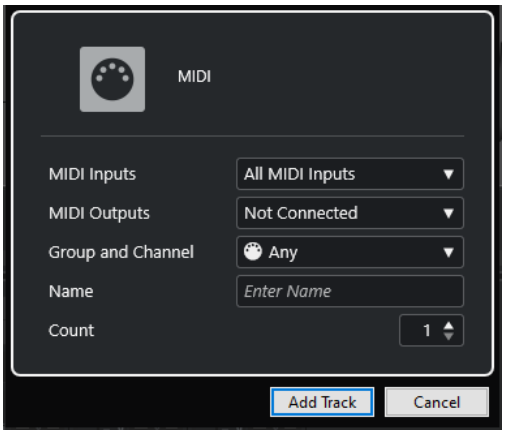
- Click **Add Track** in the global track control area of the track list, and click **MIDI**.

  This opens the global **Add Track** dialog on the **MIDI** page.



- Select **Project** > **Add Track** > **MIDI** or right-click in an empty area of the track list, and select **Add MIDI Track**.

  This opens the **MIDI** page of the **Add Track** dialog.



The following settings are available:

MIDI Inputs

Allows you to set the MIDI inputs.

MIDI Outputs

Allows you to set the MIDI outputs.

Group and Channel

Allows you to specify the MIDI group and channel.

Name

Allows you to specify a track name.

Count

Allows you to enter the number of tracks that you want to add.

NOTE

You can add an unlimited number of tracks. However, you can only add 100 tracks at a time.

Keep Dialog Open

Activate this to keep the dialog open after clicking **Add Track**. This allows you to click the page of another track type to set up and add more tracks.

NOTE

This is only available if you open the **Add Track** dialog from the global track controls.

Add Track

Adds one or more tracks, according to the track type and the settings of the active page, and closes the dialog.

Group Channel Tracks

You can use group channel tracks to create a submix of several audio channels and to 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.

For easy management, all group channel tracks are automatically placed in a special group track folder in the track list. Each group channel track has a corresponding channel. A group channel track can have any number of automation tracks.

You can add group channel tracks via the **Add Track** dialog.

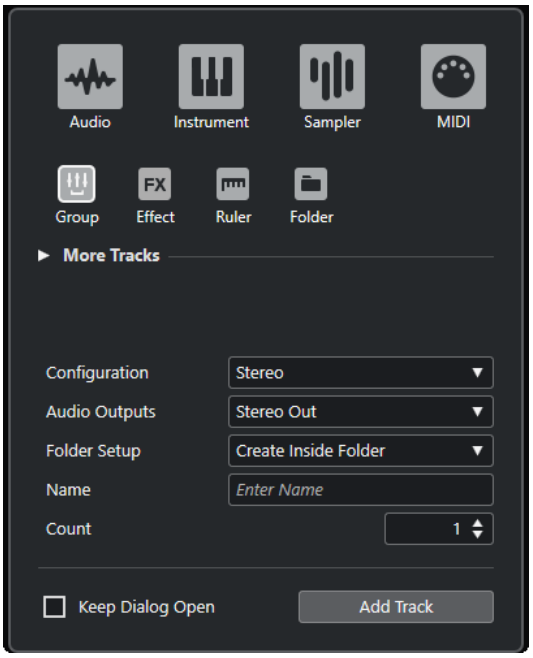
RELATED LINKS
Add Track Dialog – Group Channel on page 117

Add Track Dialog – Group Channel

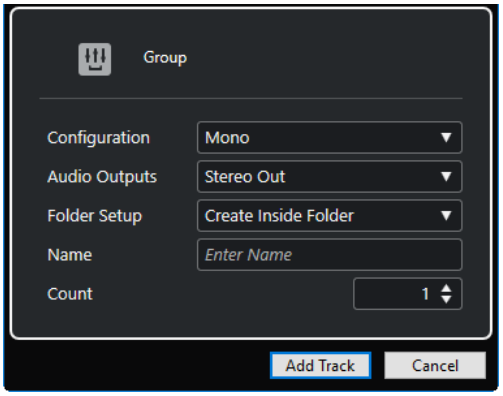
The **Group** page of the **Add Track** dialog allows you to set up and add group channel tracks.

To open the **Group** page of the **Add Track** dialog, do one of the following:

- Click **Add Track** in the global track control area of the track list, and click **Group**.
  This opens the global **Add Track** dialog on the **Group** page.



- Select **Project** > **Add Track** > **Group**.
  This opens the **Group** page of the **Add Track** dialog.



The following settings are available:

Configuration

Allows you to set the channel configuration. Audio-related tracks can be configured as mono or stereo tracks.

Audio Outputs

Allows you to set the output routing.

Folder Setup

Allows you to select whether you want to create the effect inside or outside a dedicated folder.

Name

Allows you to specify a track name.

Count

Allows you to enter the number of tracks that you want to add.

Keep Dialog Open

Activate this to keep the dialog open after clicking **Add Track**. This allows you to click the page of another track type to set up and add more tracks.

NOTE

This is only available if you open the **Add Track** dialog from the global track controls.

Add Track

Adds one or more tracks, according to the track type and the settings of the active page, and closes the dialog.

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 an FX channel folder. Each FX channel has a corresponding channel. An FX channel track can have any number of automation tracks.

You can add FX channel tracks via the **Add Track** dialog.

RELATED LINKS
Add Track Dialog – Effect on page 118

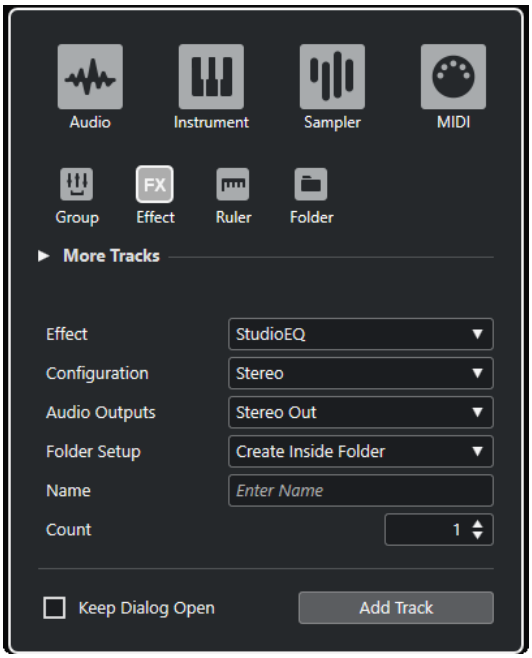
Add Track Dialog – Effect

The **Effect** page of the **Add Track** dialog allows you to set up and add FX channel tracks.

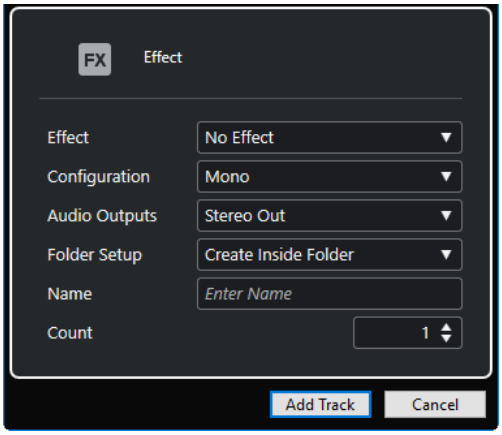
To open the **Effect** page of the **Add Track** dialog, do one of the following:

- Click **Add Track** in the global track control area of the track list, and click **Effect**.

  This opens the global **Add Track** dialog on the **Effect** page.



- Select **Project** > **Add Track** > **Effect**.
  This opens the **Effect** page of the **Add Track** dialog.



The following settings are available:

Effect
Allows you to select an effect.

Configuration
Allows you to set the channel configuration. Audio-related tracks can be configured as mono or stereo tracks.

Audio Outputs
Allows you to set the output routing.

Folder Setup
Allows you to select whether you want to create the effect inside or outside a dedicated folder.

Name
Allows you to specify a track name.

Count

Allows you to enter the number of tracks that you want to add.

Keep Dialog Open

Activate this to keep the dialog open after clicking **Add Track**. This allows you to click the page of another track type to set up and add more tracks.

NOTE

This is only available if you open the **Add Track** dialog from the global track controls.

Add Track

Adds one or more tracks, according to the track type and the settings of the active page, and closes the dialog.

RELATED LINKS
Adding FX Channel Tracks on page 415
Adding FX Channels to Selected Channels on page 415

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 from rulers and position displays in other windows.

You can add ruler tracks via the **Add Track** dialog.

RELATED LINKS
Add Track Dialog – Ruler on page 120

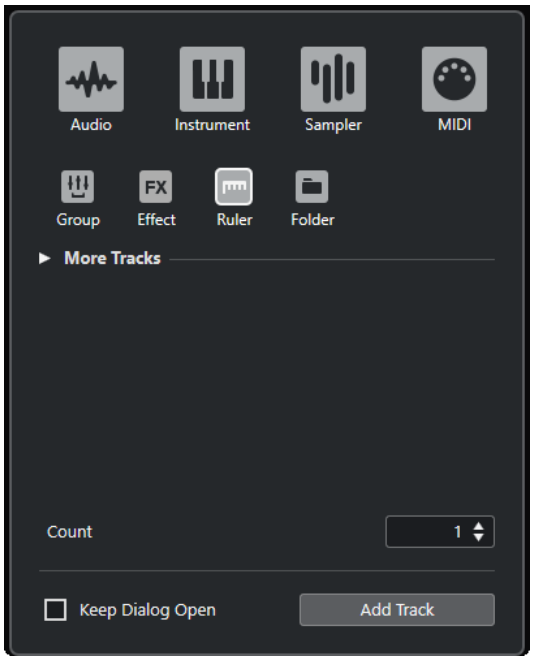
Add Track Dialog – Ruler

The **Ruler** page of the **Add Track** dialog allows you to set up and add ruler tracks.

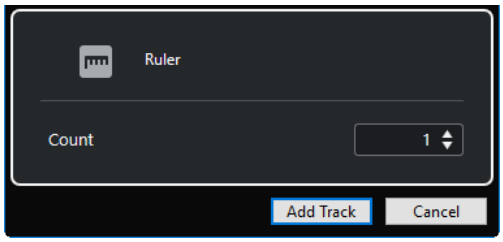
To open the **Ruler** page of the **Add Track** dialog, do one of the following:

- Click **Add Track** in the global track control area of the track list, and click **Ruler**.

  This opens the global **Add Track** dialog on the **Ruler** page.



- Select **Project** > **Add Track** > **Ruler**.
  This opens the **Ruler** page of the **Add Track** dialog.



The following settings are available:

Count

Allows you to enter the number of tracks that you want to add.

Keep Dialog Open

Activate this to keep the dialog open after clicking **Add Track**. This allows you to click the page of another track type to set up and add more tracks.

NOTE

This is only available if you open the **Add Track** dialog from the global track controls.

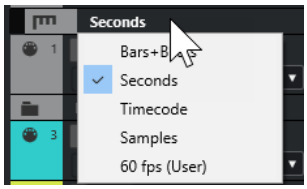
Add Track

Adds one or more tracks, according to the track type and the settings of the active page, and closes the dialog.

Ruler Track Controls

In the track list for ruler tracks, you can change the display format for the ruler.

Click the display format to open a 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, change the **MIDI Display Resolution** in the **Preferences** dialog (**MIDI** page).

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 **Project Frame Rate** pop-up menu. To display subframes, activate **Show Timecode Subframes** in the **Preferences** dialog (**Transport** page).

Samples

Activates a display format of samples.

fps (User)

Activates a display format of hours, minutes, seconds, and frames, and allows you to define the number of frames per second. To display subframes, activate **Show Timecode Subframes** in the **Preferences** dialog (**Transport** page). 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.

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.

You can add folder tracks via the **Add Track** dialog.

RELATED LINKS
Add Track Dialog – Folder on page 122

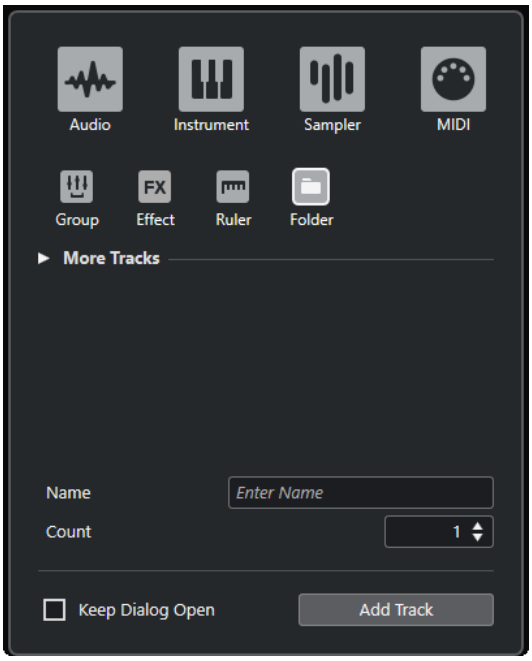
Add Track Dialog – Folder

The **Folder** page of the **Add Track** dialog allows you to set up and add folder tracks.

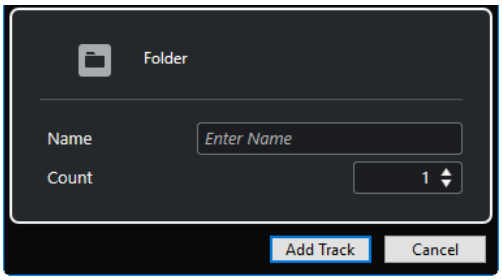
To open the **Folder** page of the **Add Track** dialog, do one of the following:

- Click **Add Track** in the global track control area of the track list, and click **Folder**.

  This opens the global **Add Track** dialog on the **Folder** page.



- Select **Project** > **Add Track** > **Folder**.
  This opens the **Folder** page of the **Add Track** dialog.



The following settings are available:

Name

Allows you to specify a track name.

Count

Allows you to enter the number of tracks that you want to add.

Keep Dialog Open

Activate this to keep the dialog open after clicking **Add Track**. This allows you to click the page of another track type to set up and add more tracks.

NOTE

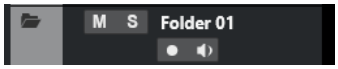
This is only available if you open the **Add Track** dialog from the global track controls.

Add Track

Adds one or more tracks, according to the track type and the settings of the active page, and closes the dialog.

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 Folder

Shows/Hides the tracks in the folder. Hidden tracks are played back as usual.

Track name

Folder

Double-click to rename the track.

Mute

M

Mutes the track.

Solo

S

Solos the track.

Record Enable

Activates the track for recording.

Monitor

For audio-related tracks, this routes incoming signals to the selected output.

For MIDI and instrument-related tracks, this allows you to route incoming MIDI signals to the selected MIDI output. For this to work, activate **MIDI Thru Active** in the **Preferences** dialog (**MIDI** page).

Lock

Disables all editing of any events on the track.

Tempo Track

You can use the tempo track to create tempo changes within a project.

You can add this track type to a project only once.

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

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 any 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 (**Step**) from the previous curve point to the new one.

Visible Tempo Upper Limit/Visible Tempo Lower Limit

Allows you to specify the display range. This changes the display scale of the tempo track, but not the tempo setting.

Signature Track

You can use the signature track to add and edit signature events, and to set up click patterns for them. The background of a signature track always displays bars. This is independent of the ruler display format setting.

You can add this track type to a project only once.

- To add the signature track to your project, select **Project** > **Add Track** > **Signature**.

RELATED LINKS
Time Signature Events on page 1034
Click Patterns Tab on page 257

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 any events on the track.

Signature Track Options

- **Copy Click Pattern to Clipboard**
  Copies the click pattern of the selected signature event to the clipboard.

- **Paste Click Pattern to Selected Signatures**

  Pastes the click pattern from the clipboard to selected signature events.

  NOTE

  This only works if the selected signature events are equal.

- **Apply Click Pattern to Equal Signatures**

  Pastes the click pattern from the clipboard to signature events that are equal.

  NOTE

  This does not require you to select the signature events beforehand.

- **Reset Click Pattern to Default**

  Sets the click pattern of the selected signature event to default. If no signature event is selected, the click patterns of all signature events are set to default.

- **Show Click Patterns**

  Allows you to show/hide the click patterns for the signature events.

- **Render MIDI Click between Locators**

  Adds a MIDI track to your project and creates a MIDI part that contains the click pattern between the left and right locator.

- **Render Audio Click between Locators**

  Adds an audio track to your project and creates an audio event that contains the click pattern between the left and right locator.

RELATED LINKS
Click Patterns Tab on page 257

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.

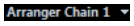
You can add this track type to a project only once.

- To add the arranger track to your project, select **Project** > **Add Track** > **Arranger**.

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

Displays which arranger event is active.

Current Repeat

Displays which repeat is active.

Activate Arranger Mode

Allows you to activate and to deactivate the arranger mode.

Switch Time Base

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

Open Arranger Editor

Opens the **Arranger Editor** for the track.

Transpose Track

You can use the transpose track to set global key changes.

You can add this track type to a project only once.

- To add the transpose track to your project, select **Project** > **Add Track** > **Transpose**.

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.

Switch Time Base

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

Lock

Disables all editing of any events on 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.

You can add this track type to a project only once.

- To add the chord track to your project, select **Project** > **Add Track** > **Chord**.

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 the chord track contains the following controls:

Record Enable

Activates the track for recording.

Mute Chord Track

Mutes the track.

Select Track for Auditioning

Allows you to select a track for auditioning the 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.

Video Tracks

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.

You can add this track type only once to a project.

- To add a video track, select **Project** > **Add Track** > **Video**.

Video Track Controls

The track list for the video track contains parameters to control the video track.

Mute Video Track

Mutes the track.

Name

Track 01

Shows the name of the track. Double-click to rename the track.

Lock

Disables all editing of any 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.

Marker Track

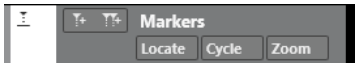
You can use the marker track to add and edit markers that help you to locate certain positions quickly.

You can add this track type only once to a project.

- To add the marker track to your project, select **Project** > **Add Track** > **Marker**.

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.

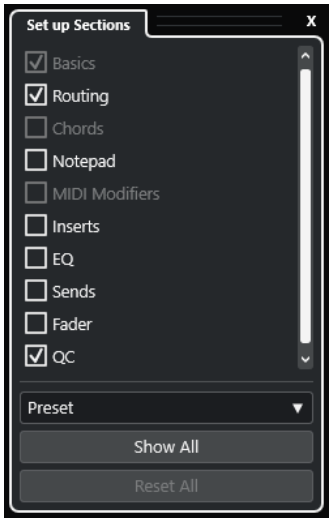
Add Cycle Marker

Allows you to add a cycle marker at the project cursor position.

Set up Inspector Sections Pane

For audio-related and MIDI-related tracks you can configure the visibility settings of the individual **Inspector** sections. You can also specify the order of the sections.

- To configure the sections for the **Inspector**, right-click an empty area of the **Inspector**, and select **Set up Sections**.



Section options

Activate/Deactivate the option for the section that you want to show/hide.

Preset

Allows you to save the settings as presets.

Show All

Shows all sections.

Reset All

Allows you to restore the default settings.

NOTE

You can change the order of the sections by dragging them up or down in the list.

RELATED LINKS
Track Inspector Sections on page 130
Channel Sections on page 147

Track Inspector Sections

For audio-related and MIDI-related tracks, you can set up track-specific **Inspector** sections on the **Set up Sections** pane.

Depending on the track type, you can set up the following track **Inspector** sections:

Basics

Allows you to set up the basic track settings.

Routing

For audio-related channels/tracks, this allows you to set up the input and output routing.

For MIDI-related tracks, this allows you to set up the input and output routing and the MIDI channel.

Track Versions

Allows you to create and edit **Track Versions**.

Chords

For audio-related channels/tracks, this allows you to specify how the track follows the chord track.

For MIDI-related channels/tracks, this allows you to specify how the track follows the chord track.

Notepad

Allows you to enter annotations for the track.

Note Expression

For MIDI-related channels/tracks, this allows you to work with the **Note Expression** features.

MIDI Inserts

For MIDI-related channels/tracks, this allows you to add MIDI insert effects.

MIDI Modifiers

For MIDI-related channels/tracks, this allows you to transpose or to adjust the velocity of the MIDI track events in real time during playback.

MIDI Sends

For MIDI-related channels/tracks, this allows you to add MIDI send effects.

Inserts

For audio-related channels/tracks, this allows you to add audio insert effects.

EQ

For audio-related channels/tracks, this allows you to adjust up to four bands of EQs.

Sends

For audio-related channels/tracks, this allows you to select send effects.

Fader

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

QC

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

NOTE

To expand/collapse a section, click its header or the arrow to the left of the section header. If the section is too narrow, the arrow is automatically hidden.

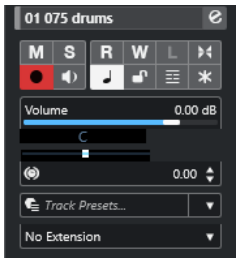
RELATED LINKS

Inspector Sections on page 57
Set up Inspector Sections Pane on page 130
Track Versions Section on page 175
Insert Effects on page 408
Send Effects on page 414

Equalizer on page 375
Chords Section for MIDI Tracks on page 939
Strip on page 378
Track Quick Controls on page 688
Note Expression on page 896
MIDI Modifiers Section on page 750
MIDI Inserts on page 754
MIDI Sends on page 756

Basics Section for Audio Tracks

The **Basics** section 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 to show/hide the basic track settings section. Double-click to rename the track. **Alt/Opt**-click to colorize the track.

Edit Channel Settings

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.

Auto Fades Settings

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

Record Enable

Activates the track for recording.

Monitor

Routes incoming signals to the selected output.

Switch Time Base

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

Lock

Disables all editing of any events on the track.

Show Lanes

Divides the tracks into lanes.

Freeze Channel

Allows you to freeze the audio channel.

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.

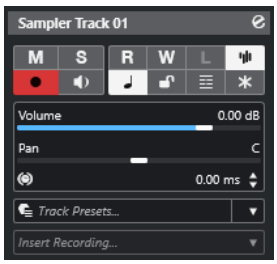
Select Extension

Allows you to select an extension for the track.

RELATED LINKS
Track Inspector Sections on page 130

Basics Section for Sampler Tracks

The **Basics** section 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 Channel Settings

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/Close Sampler

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

Record Enable

Activates the track for recording.

Monitor

Routes incoming MIDI to the selected MIDI output. For this to work, activate **MIDI Thru Active** in the **Preferences** dialog (**MIDI** page).

Switch Time Base

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

Lock

Disables all editing of any events on the track.

Show Lanes

Divides the tracks into lanes.

Freeze 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.

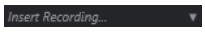
Delay

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.

Retrospective Recording

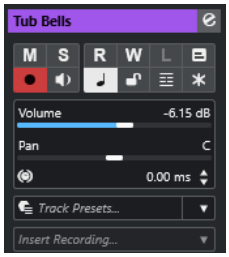


Opens a pop-up menu that allows you to insert a retrospective track recording, that is, MIDI data that was captured during playback.

RELATED LINKS
Track Inspector Sections on page 130
Freezing Sampler Tracks on page 585

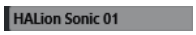
Basics Section for Instrument Tracks

The **Basics** section 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



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

Edit Channel Settings

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.

Edit In-Place

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

Record Enable

Activates the track for recording.

Monitor

Routes incoming MIDI to the selected MIDI output. For this to work, activate **MIDI Thru Active** in the **Preferences** dialog (**MIDI** page).

Switch Time Base

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

Lock

Disables all editing of any events on the track.

Show Lanes

Divides the tracks into lanes.

Freeze 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.

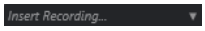
Delay

Allows you to adjust the playback timing of the track.

Load/Save/Reload Track Preset

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

Retrospective Recording

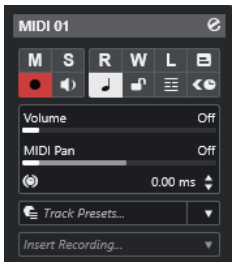


Opens a pop-up menu that allows you to insert a retrospective track recording, that is, MIDI data that was captured during playback.

RELATED LINKS
Track Inspector Sections on page 130
Freezing Instruments on page 674

Basics Section for MIDI Tracks

The **Basics** section for MIDI tracks contains controls and parameters that allow you to control your MIDI track. These affect MIDI events in real time, 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 Channel Settings

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.

Edit In-Place

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

Record Enable

Activates the track for recording.

Monitor

Routes incoming MIDI to the selected MIDI output. For this to work, activate **MIDI Thru Active** in the **Preferences** dialog (**MIDI** page).

Switch Time Base

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

Lock

Disables all editing of any events on the track.

Show Lanes

Divides the tracks into lanes.

ASIO Latency Compensation

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

Volume

Allows you to adjust the level of the track.

MIDI Pan

Allows you to adjust the MIDI panning of the track.

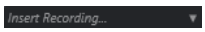
Delay

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.

Retrospective Recording

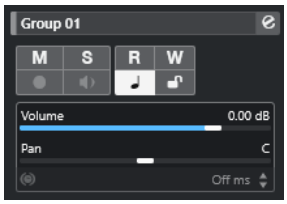


Opens a pop-up menu that allows you to insert a retrospective track recording, that is, MIDI data that was captured during playback.

RELATED LINKS
Track Inspector Sections on page 130

Basics Section for Group Channel Tracks

The **Basics** section 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 Channel Settings

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.

Switch Time Base

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

Lock

Disables all editing of any events on the track.

Volume

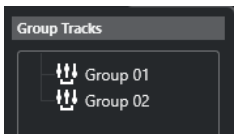
Allows you to adjust the level of the track.

Pan

Allows you to adjust the panning of the track.

NOTE

When you select the group folder track, the **Inspector** shows the folder and the group channels it contains. You can click one of the group channels shown in the folder to display the settings for that group channel in the **Inspector**.

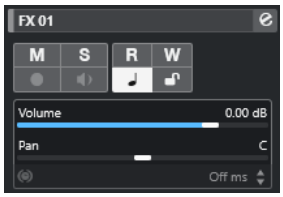


RELATED LINKS

Track Inspector Sections on page 130

Basics Section for FX Channel Tracks

The **Basics** section for FX channel tracks shows the settings for the FX channel.



Track name

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

Edit Channel Settings

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.

Switch Time Base

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

Lock

Disables all editing of any events on the track.

Volume

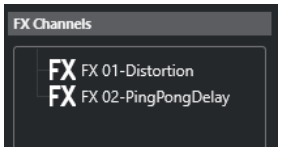
Allows you to adjust the level of the track.

Pan

Allows you to adjust the panning of the track.

NOTE

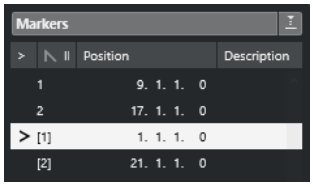
When you select the FX folder track, the **Inspector** shows the folder and the FX channels it contains. You can click one of the FX channels shown in the folder to display the settings for that channel in the **Inspector**.



RELATED LINKS
Track Inspector Sections on page 130

Basics Section for Marker Tracks

The **Basics** section for marker tracks displays the marker list.



Track name

Double-click to rename the track.

Open Marker Window

Opens the **Markers** window.

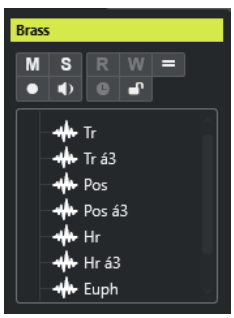
Marker attributes

Shows the markers, their IDs, and their time positions. Click in the leftmost column for a marker to move the project cursor to the marker position.

RELATED LINKS
Track Inspector Sections on page 130

Folder Track Inspector

The **Inspector** for folder tracks shows the folder and its underlying track, similar to the folder structure in the File Explorer/macOS Finder. When you select 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

For audio-related tracks, this routes incoming signals to the selected output.

For MIDI and instrument-related tracks, this allows you to route incoming MIDI signals to the selected MIDI output. For this to work, activate **MIDI Thru Active** in the **Preferences** dialog (**MIDI** page).

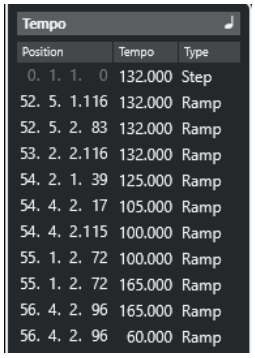
Lock

Disables all editing of any events on the track.

RELATED LINKS
Track Inspector Sections on page 130

Tempo Track Inspector

The tempo track **Inspector** displays a list of all tempo events.



Open Tempo Track Editor

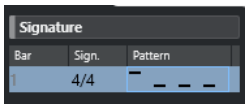
Opens the **Tempo Track Editor**.

Tempo event list

Shows a list of all tempo events that allows you to edit tempo events and their positions.

Signature Track Inspector

The signature track **Inspector** displays a list of all time signature events.



Bar

Shows the number of the bar where the signature event is positioned. Double-click the field and enter a new value to change the position of the signature event.

NOTE

The first signature event is always positioned at bar 1. You cannot change this.

Sign.

Shows the value of the signature event. Double-click the field and enter a new value to change the time signature.

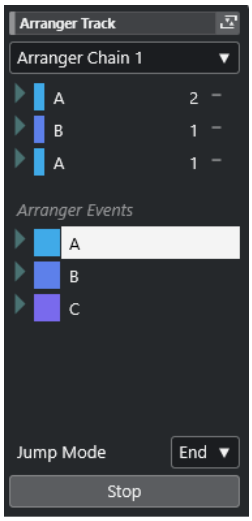
Pattern

Shows the click pattern that is used. Double-click the field to open the **Click Pattern Editor** where you can change the pattern.

RELATED LINKS
Click Pattern Editor on page 250

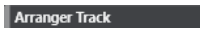
Arranger Track Inspector

The arranger track **Inspector** displays the lists of available arranger chains and arranger events.



The arranger track **Inspector** contains the following settings:

Track name

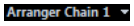


Double-click to rename the track.

Open Arranger Editor

Opens the **Arranger Editor**.

Select Active Arranger Chain + Functions



Allows you to select the active arranger chain, to rename it, to create a new one, to duplicate, or to flatten it.

Arranger Events

Lists all arranger events in your project. Click the arrow of an arranger event to play it back and start the live mode.

Stop

Stops playback after the time interval set in the **Jump Mode** pop-up menu.

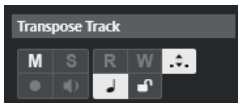
Jump Mode

Allows you to define how long the active arranger event is played before jumping to the next one.

RELATED LINKS
Jump Mode on page 326
Arranger Editor on page 320

Transpose Track Inspector

The transpose track **Inspector** contains parameters to control the transpose track.



Keep Transpose in Octave Range

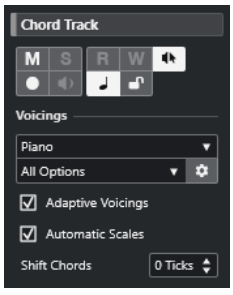
Allows you to keep the transposition in the octave range and ensures that nothing is transposed by more than seven semitones.

Switch Time Base

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

Chord Track Inspector

The chord track **Inspector** contains 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 Chord Track

Mutes the track.

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.

Record Enable

Activates the track for recording.

Switch Time Base

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

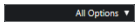
Lock

Disables all editing of any 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.

Set up Voicing

Allows you to configure your own voicing parameters for a specific voicing scheme.

Adaptive Voicings

If this option is activated, the voicings are set automatically.

Automatic Scales

If this option is activated, the program automatically creates scale events.

Shift Chords

Allows you to specify an offset value to ensure that chord events also affect the MIDI notes. Enter a negative value to affect notes that have been triggered too early. Enter a positive value to affect notes that have been triggered too late.

RELATED LINKS

Track Inspector Sections on page 130

Video Track Inspector

The video track **Inspector** contains parameters to control the video track.

Reveal Video Window

Opens the **Video Player** window.

Mute Video Track

Mutes 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 the video track.

Lock

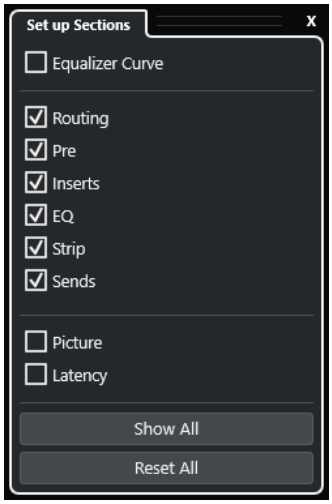
Disables all editing of any events on the track.

RELATED LINKS
Track Inspector Sections on page 130

Set up Channel Sections Pane

For audio-related and MIDI-related tracks you can configure the visibility settings of the individual **Channel** sections. You can also specify the order of the sections.

- To configure the sections for the **Channel** tab, right-click an empty area of the **Channel** tab, and select **Set up Sections**.



Section options

Activate/Deactivate the option for the section that you want to show/hide.

Show All

Shows all sections.

Reset All

Allows you to restore the default settings.

NOTE

You can change the order of the sections by dragging them up or down in the list.

RELATED LINKS

Track Inspector Sections on page 130
Channel Sections on page 147

Channel Sections

You can set up channel-specific sections on the **Set up Sections** pane for the **Channel** tab.

Depending on the track type, you can set up the following **Channel** sections:

Equalizer Curve

For audio-related tracks/channels, this allows you to draw an EQ curve. Click in the curve display to open a larger view, where you can edit the curve points.

Routing

For audio-related channels/tracks, this allows you to set up the input and output routing.

For MIDI-related tracks, this allows you to set up the input and output routing and the MIDI channel.

Pre

For audio-related tracks/channels, it contains input filter and gain controls along with **Phase** and **Gain** controls.

For MIDI channels, it contains an **Input Transformer** control.

Inserts

For audio-related channels/tracks, this allows you to add audio insert effects.

Inserts

For MIDI-related channels/tracks, this allows you to add MIDI insert effects.

EQ

For audio-related channels/tracks, this allows you to adjust up to four bands of EQs.

Strip

For audio-related tracks/channels, this allows you to integrate channel strip modules that enable you to enhance your sound.

Sends

For audio-related channels/tracks, this allows you to select send effects.

Sends

For MIDI-related channels/tracks, this allows you to add MIDI send effects.

Picture

Allows you to add a picture to the channel.

Latency

For audio-related tracks/channels, this displays the latencies caused by insert effects, channel strip modules, or panners.

To expand/collapse a section, click its header or the arrow to the left of the section header. If the section is too narrow, the arrow is automatically hidden.

RELATED LINKS
Channel Tab on page 52
Channel Sections on page 147
Set up Inspector Sections Pane on page 130

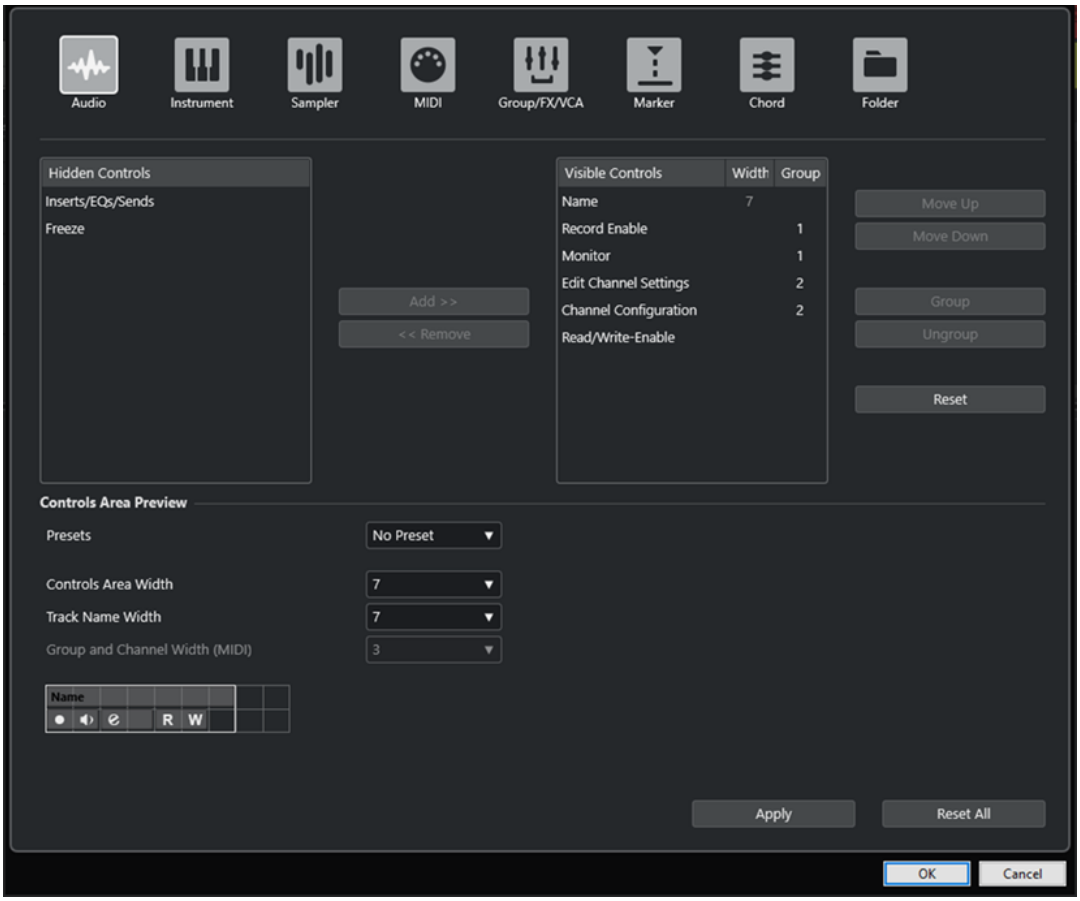
Track Controls Settings Dialog

The **Track Controls Settings** dialog allows you to configure which track controls are displayed 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.

NOTE

The **Track Controls Settings** dialog is available for the main track types. The track types that are shown in the **More Tracks** section of the **Add Track** dialog, however, have a fixed set of track-specific controls. Exceptions to this are the chord track and the video track.

- 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

Allows you to set the maximum length for the track name.

Group

Displays the group number.

Add

Allows you to move a selected item from the list of hidden controls to the list of visible controls.

Remove

Allows you to move a selected item from the list of visible controls to the list of hidden controls. All controls can be removed, except for **Mute** and **Solo**.

Move Up/Move Down

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

Group

Allows you to group two or more selected items in the visible controls list that are next 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 of 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.

Presets

Allows you to save settings for track controls 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.

Controls Area Width

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

Track Name Width (global)

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

Group and Channel Width (MIDI)

Allows you to determine the width for the group and channel field for MIDI-related track types.

Apply

Applies your settings.

Reset All

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

Track Controls

You can configure which track controls are shown in the track list.

NOTE

You can only configure track controls for the main track types. The track types that are shown in the **More Tracks** section of the **Add Track** dialog, however, have a fixed set of track-specific controls. The chord track and the video track are exceptions to this.

The following track controls are always shown:

Mute

Mutes the track.

Solo

Solos the track.

The track name control is available for all track types:

Name

Shows the name of the track. Double-click to rename the track.

Audio-Related Tracks

The following track controls are specific to audio-related tracks, that is, audio tracks, instrument tracks, sampler tracks, group channel tracks, and FX channel tracks:

Inserts State

Shows the state of the inserts for the track. Click the button to bypass the inserts. Right-click it to show which insert effect is loaded.

Bypass EQs

Shows the state of the equalizers for the track. Click the button to bypass the equalizers.

Bypass Sends

Shows the state of the sends for the track. Click the button to bypass the sends. Right-click it to show which send effect is loaded.

Freeze Channel

Opens a dialog that allows you to set the **Tail Size** time in seconds.

Channel Configuration

Shows the channel configuration of the track.

For mono and stereo tracks, it allows you to switch between mono and stereo.

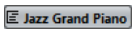
MIDI-Related Tracks

The following controls are specific to MIDI-related tracks, that is, MIDI tracks, sampler tracks, and instrument tracks:

ASIO Latency Compensation

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

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.

Drum Map

Allows you to select a drum map for the track.

Audio- and MIDI-Related Tracks

The following track controls are specific to audio- and MIDI-related tracks:

Record Enable

Activates the track for recording.

Monitor

For audio-related tracks, this routes incoming signals to the selected output.

For MIDI and instrument-related tracks, this allows you to route incoming MIDI signals to the selected MIDI output. For this to work, activate **MIDI Thru Active** in the **Preferences** dialog (**MIDI** page).

Edit Channel Settings

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

Show Lanes

Divides the tracks into lanes.

Lock

Disables all editing of any events on the track.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

Instrument Tracks

The following controls are specific to instrument tracks:

Edit Instrument

Allows you to open the instrument panel.

Instrument

Allows you to select an instrument.

Sampler Tracks

The following controls are specific to sampler tracks:

Open/Close Sampler

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

MIDI Tracks

The following controls are specific to MIDI tracks:

Group and Channel

Allows you to specify the MIDI channel.

Output

Allows you to specify the output for the track.

Inserts State

Shows the state of the inserts for the track. Click the button to bypass the inserts. Right-click it to show which insert effect is loaded.

Bypass Sends

Shows the state of the sends for the track. Click the button to bypass the sends. Right-click it to show which send effect is loaded.

Group/FX/VCA Tracks

The following track controls are specific to group/FX/VCA tracks:

Mute

Mutes the track.

Solo

Solos the track.

Edit Channel Settings

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

Channel Configuration

Shows the channel configuration of the track.

For mono and stereo tracks, it allows you to switch between mono and stereo.

Marker Tracks

The following controls are specific to marker tracks:

Add Position Marker

Allows you to add a position marker at the project cursor position. This track control is always shown.

NOTE

Shift-clicking allows you to add a marker and instantly rename it.

Add Cycle Marker

Allows you to add a cycle marker at the project cursor position. This track control is always shown.

NOTE

Shift-clicking allows you to add a marker and instantly rename it.

Locate

Allows you to move the project cursor to the selected marker position.

Cycle

Cycle

Allows you to select a cycle marker.

Zoom

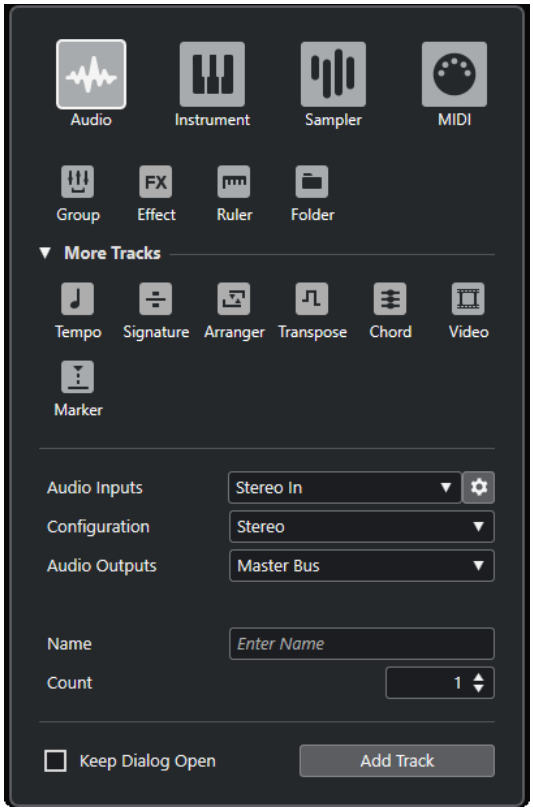
Zoom

Allows you to zoom in on a cycle marker.

Add Track Dialog

The **Add Track** dialog allows you to set up and add tracks.

To open the **Add Track** dialog, click **Add Track** in the global track control area of the track list.



RELATED LINKS

Add Track Dialog – Audio on page 110
Add Track Dialog – Instrument on page 112
Add Track Dialog – Sampler on page 113
Add Track Dialog – MIDI on page 115
Add Track Dialog – Group Channel on page 117
Add Track Dialog – Effect on page 118
Add Track Dialog – Ruler on page 120
Add Track Dialog – Folder on page 122
Tempo Track on page 124
Signature Track on page 125
Arranger Track on page 126
Transpose Track on page 127

Chord Track on page 128
Video Tracks on page 128
Marker Track on page 129

Track Handling

Tracks are the building blocks of your project. In Cubase, events and parts are placed on tracks.

Adding Tracks via Double-Click

You can add tracks by double-clicking in the track list.

PROCEDURE

- Do one of the following:
  - To add a MIDI track, make sure no track is selected, and double-click an empty area of the track list.
  - To add an audio track or a MIDI and adapt the same input bus, output bus of a track of the same type, select that track and double-click an empty area of the track list.

RELATED LINKS

Deselecting Tracks on page 166

Adding Tracks via the Add Track Dialog

You can add tracks via the **Add Track** dialog.

PROCEDURE

1. In the global track control area of the track list, click **Add Track** .
2. Do one of the following:
   - Click the track type and set up the options according to your needs.
   - To add other track types, open the **More Tracks** section and click the track type.
3. Click **Add Track**.

RESULT

The new track is added to the project below the selected track.

RELATED LINKS

Add Track Dialog – Audio on page 110
Add Track Dialog – Instrument on page 112
Add Track Dialog – Sampler on page 113
Add Track Dialog – MIDI on page 115
Add Track Dialog – Effect on page 118
Add Track Dialog – Group Channel on page 117
Add Track Dialog – Ruler on page 120
Add Track Dialog – Folder on page 122
Tempo Track on page 124
Signature Track on page 125
Arranger Track on page 126

Transpose Track on page 127
Chord Track on page 128
Video Tracks on page 128
Marker Track on page 129

Adding Tracks Using Track Presets

You can add tracks based on track presets. Track presets contain sound and channel settings.

PROCEDURE

1. In the global track control area of the track list, click **Use Track Preset**.
2. In the **Choose Track Preset** dialog, select a track preset.
   The number and type of the added tracks depend on the selected track preset.
3. Click **OK**.

RESULT

The new tracks are added to the project below the selected track.

RELATED LINKS

Track Presets on page 181

Adding Tracks by Dragging Files from the MediaBay

You can add 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 **Media** rack in the right zone of the **Project** window is open. Click **Show/Hide Right Zone** and click the **Media** tab to open it.

PROCEDURE

1. In the **MediaBay**, select the files for which you want to add tracks.
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. It 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 and Media Rack on page 610
Media Rack in Right Zone on page 610
Import Options Dialog for Audio Files on page 285

Exporting MIDI Tracks as Standard MIDI Files

You can export MIDI tracks as standard MIDI files. This allows you to transfer MIDI material to virtually any MIDI application on any platform.

PROCEDURE

1. Select **File** > **Export** > **MIDI File**.
2. In the file dialog that opens, specify a location and name for the file.
3. Click **Save**.
4. In the **Export Options** dialog, activate the settings that you want to export, and click **OK**.

RESULT

The MIDI file is exported. It includes the tempo and the 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

If you want to include **Inspector** settings that differ from those specified in the **Export Options**, use **Merge MIDI in Loop** to convert these settings to real MIDI events.

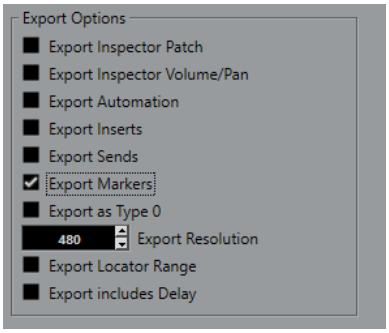
RELATED LINKS

Export Options Dialog for MIDI Files on page 158
Merging MIDI Events into a New Part on page 768

Export Options Dialog for MIDI Files

The **Export Options** for MIDI files allow you to specify what data to include in the exported MIDI files.

- To open the **Export Options** for MIDI files, select **File** > **Export** > **MIDI File**.



Export Inspector Patch

Includes MIDI patch settings in the **Inspector** as MIDI bank select and program change events in the MIDI file.

Export Inspector Volume/Pan

Includes volume and pan settings in the **Inspector** as MIDI volume and pan events in the MIDI file.

Export Automation

Includes automation as MIDI controller events in the MIDI file. This also includes automation recorded with the **MIDI Control** plug-in.

If you record a continuous controller (CC 7, for example) and deactivate **Read Automation** for the automation track, only the part data for this controller is exported.

Export Inserts

Includes MIDI modifiers and MIDI inserts in the MIDI file.

Export Sends

Includes MIDI sends in the MIDI file.

Export Markers

Includes markers as standard MIDI file marker events in the MIDI file.

Export as Type 0

Exports a type 0 MIDI file with all data on a single track, but on different MIDI channels. If you deactivate this option, a type 1 MIDI file with data on separate tracks is exported.

Export Resolution

Allows you to set 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 based on the application or sequencer to be used, because certain applications and sequencers may not be able to handle certain resolutions.

Export Locator Range

Exports only the range between the left and the right locator.

Export includes Delay

Includes delay settings you have made in the MIDI file via the **Inspector**.

RELATED LINKS
Automation on page 654
Markers on page 337
MIDI Track Parameters on page 747
Merging MIDI Events into a New Part on page 768
Export Options on page 1141
Exporting MIDI Parts as MIDI Files on page 213

Channel Configurations

The channel configuration of audio, group channel, and FX channel tracks defines their number and configuration of speaker channels. Cubase supports mono, stereo, and several 2D and 3D surround channel configurations.

For audio, group channel, and FX channel tracks in your project, you can change the channel configuration from mono to stereo and vice versa at any time.

NOTE

- You cannot switch channel configurations during recording.
- You cannot switch the channel configuration of a frozen track.

When you switch the channel configuration, the following routing rules apply:

- When switching from stereo to mono, the left signal of the stereo input is used.
- When switching a mono track that uses a mono input bus to stereo, the mono input bus is kept.

RELATED LINKS
Switching the Channel Configuration between Mono and Stereo on page 160

Switching the Channel Configuration between Mono and Stereo

You can switch the channel configuration between mono and stereo for audio, group channel, and FX channel tracks.

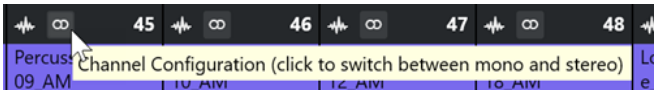
PREREQUISITE

Recording is not activated.

PROCEDURE

- Do one of the following:
  - In the track control area of an audio, group channel, and FX channel track in mono or stereo channel configuration, click **Channel Configuration**.

  - In the **MixConsole** fader section of an audio, group channel, and FX channel track in mono or stereo channel configuration, click **Channel Configuration**.



RESULT

The channel configuration of the track switches from mono to stereo, or vice versa.

RELATED LINKS
Channel Configurations on page 159

Removing Selected Tracks

You can remove selected tracks from the track list.

PROCEDURE

- Select **Project** > **Remove Selected Tracks**.

  If you delete tracks that are not empty, a warning message is displayed.

  NOTE

  You can deactivate this message. To reactivate the message, activate **Display Warning before Deleting Non-Empty Tracks** in the **Preferences** dialog (**Editing** page).

Removing Empty Tracks

You can remove empty tracks from the track list.

PROCEDURE

- 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

You can rename tracks.

PROCEDURE

1. Do one of the following:
   - Double-click a track name, and type in a new name for the track.
   - With multiple tracks selected, to rename the first one, select **Edit** > **Rename** > **Rename First Selected Track**.

     NOTE

     Alternatively, you can use a key command (by default **Alt** - **F2**).
2. Press **Return**.

   To assign the same name to all events on the track, hold down any modifier key, and press **Return**.

AFTER COMPLETING THIS TASK

If the **Parts Get Track Names** option is activated in the **Preferences** dialog (**Editing** page) and you move an event from one track to another, the moved event is automatically named according to its new track.

Automatically Assigning Colors to New Tracks/Channels

You can automatically assign colors to newly added tracks or channels.

PROCEDURE

1. Select **Edit** > **Preferences**.
2. Open the **User Interface** page, and select **Track & MixConsole Channel Colors**.
3. Open the **Auto Track/Channel Color Mode** pop-up menu and select an option.
4. Click **OK**.

RESULT

Any tracks/channels that you added by using **Add Track**, or by dragging files from the **Media** rack to the event display, are automatically colorized according to your settings.

RELATED LINKS

User Interface - Track & MixConsole Channel Colors on page 1149

Showing Track Pictures

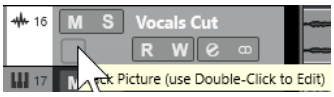
Track pictures can help you to recognize your tracks. Track pictures are available for audio, instrument, MIDI, FX channel, and group channel tracks.

PREREQUISITE

Adjust the track height to at least two 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.
3. Double-click the rectangle.
4. In the **Track Pictures Browser**, select a picture.
5. Click **OK**.

RESULT

The picture is shown in the track list and in the **MixConsole** pictures section.

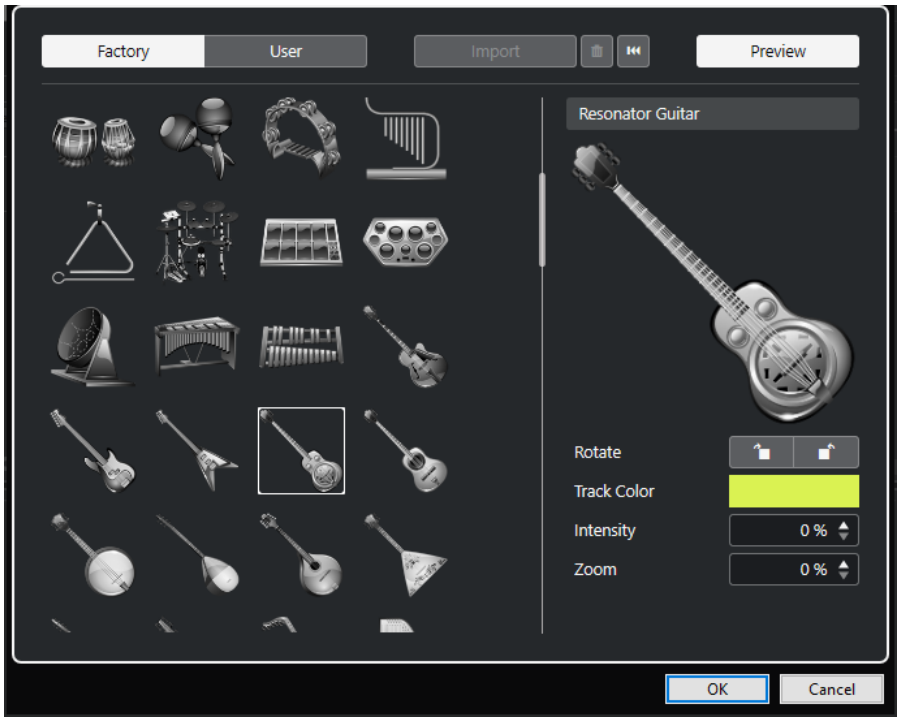
RELATED LINKS

Track Pictures Browser on page 162
Adding Pictures to MixConsole Channels on page 389

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**. With track pictures, you can recognize tracks and channels. 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 the square in the lower left side of the track list.



Pictures browser

Shows the pictures that you can assign to the selected track/channel.

Factory

Shows the factory content in the pictures browser.

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 pictures from the user library.

Reset Current Picture

Removes the picture from the selected track/channel.

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.

Rotate

Allows you to rotate the track picture.

Track Color

Opens the **Colorize** pane that allows you to select a track color.

Intensity

Allows you to apply the track color to the track picture and to set the color intensity.

Zoom

Allows you to change the size of the track picture.

RELATED LINKS
Showing Track Pictures on page 162
Adding Pictures to MixConsole Channels on page 389

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.

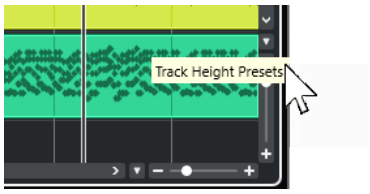
- To change the height of an individual track, click its lower border in the track list and drag up or down.
- To change the height of all tracks simultaneously, hold down **Ctrl/Cmd**, click the lower border of one track, and drag up or down.
- To set the number of tracks to view in the **Project** 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 Height Presets Menu on page 164
Track Controls Settings Dialog on page 148

Track Height Presets Menu

The **Track Height Presets** menu allows you to set the number of tracks and the track height in the **Project** window.

- To open the **Track Height Presets** 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 1 Row

Zooms all tracks to a height of 1 row.

Zoom Tracks 2 Rows

Zooms all tracks to a height of 2 rows.

Zoom Tracks 3 Rows

Zooms all tracks to a height of 3 rows.

Zoom Tracks 4 Rows

Zooms all tracks to a height of 4 rows.

Zoom Tracks N Rows

Opens a dialog where you can define a custom number of rows.

Zoom Tracks Full

Zooms all tracks to fit in the active **Project** window.

Zoom 4 Tracks

Zooms in on the selected and 3 adjacent tracks.

Zoom 8 Tracks

Zooms in on the selected and 7 adjacent tracks.

Zoom N Tracks

Opens a dialog where you can define a custom number of tracks.

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.

RELATED LINKS
Horizontal Zoom Presets on page 78
Zooming in the Project Window on page 76

Selecting Tracks

You can select one or multiple tracks in the track list.

- 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.

RELATED LINKS
Track Selection Follows Event Selection on page 1129
Scroll to Selected Track on page 1132
Select Channel/Track on Solo on page 1132
Select Channel/Track on Edit Settings on page 1132

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. You can also 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, activate **Use Up/Down Navigation Commands for Selecting Tracks Only** in the **Preferences** dialog (**Editing** page).

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 is automatically 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 is not altered.

Deselecting Tracks

You can deselect tracks that are selected in the track list.

PROCEDURE

- **Shift**-click a selected track.

RESULT

The track is deselected.

Duplicating Tracks

You can duplicate a track with all of its 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

1. Select the tracks that you want to disable.
2. Right-click in the track list and select **Disable Selected Tracks** from the context menu.

RESULT

The track color changes and the corresponding channel in the **MixConsole** is hidden.

To enable the disabled tracks and to restore all channel settings, right-click in the track list and select **Enable Selected Tracks**.

Freezing Multiple Tracks

You can freeze multiple selected audio, instrument, or sampler tracks.

PROCEDURE

1. In the track list, select the tracks that you want to freeze.
2. Do one of the following:
   - Select **Edit** > **Freeze/Unfreeze** > **Selected Tracks**.

- Right-click one of the selected tracks, and from the context menu, select **Freeze/Unfreeze Selected Tracks**.

NOTE

If you select several tracks, and you click **Freeze Channel** in the **Inspector**, only the active track is frozen.

3. In the **Freeze Channel Options** dialog, make your changes.

NOTE

You can also select **Edit** > **Freeze/Unfreeze** > **Selected Tracks (with Current Settings)** to freeze the tracks without showing the **Freeze Channel Options** dialog. In this case, the last settings are applied.

4. Click **OK**.

RESULT

- The output of the tracks are rendered to audio files, and on playback you hear the same sound as before freezing.
- Less CPU load is used.
- The **Freeze Channel** buttons light up.
- The track controls are grayed out.
- The audio events and MIDI parts are locked.
- You can still adjust the level and panning, make EQ settings, and adjust the effect sends.
- The **Sampler Control** section in the lower zone of the **Project** window is disabled.

NOTE

The audio file is saved in the **Freeze** folder that can be found in the following location:

- Windows: within the **Project** folder
- macOS: **User/Documents**

The freeze options are saved and used for all further freeze operations.

NOTE

In the **Key Commands** dialog in the **Edit** category, you can also assign a key command for **Freeze/Unfreeze Selected Tracks** and **Freeze/Unfreeze Selected Tracks (with Current Settings)**.

AFTER COMPLETING THIS TASK

To unfreeze the frozen tracks, select them and select **Edit** > **Freeze/Unfreeze** > **Selected Tracks** or **Edit** > **Freeze/Unfreeze** > **Selected Tracks (with Current Settings)**.

RELATED LINKS

Freezing Insert Effects on page 412
Freezing Instruments on page 674
Freeze Channel Options Dialog for Instruments on page 675
Unfreeze Channel Options Dialog for Instruments on page 676
Freezing Sampler Tracks on page 585

Freeze Channel Options Dialog for Sampler Tracks on page 586
Unfreeze Channel Options Dialog for Sampler Tracks on page 587

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 add a folder track, click **Add Track** in the global track control area of the track list, and click **Folder**.
- To add a folder track and to move all selected tracks into it, open the **Project** menu. 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.

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 122

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, only the one that is in the front is played back. You can, however, select the event/region that you want to play back.

PROCEDURE

- Do one of the following:

- Right-click the audio event in the event display and select the desired event or region from the **To Front** or **Set to Region** submenu.

  NOTE

  The available options depend on whether you performed a linear or a cycle recording and on the record mode you used. When recording audio in cycle mode, the recorded event is divided into regions, one for each take.

- Click the middle handle on the lower border of a stacked event, and select an entry from the pop-up menu.
- In the track list, activate **Show Lanes**, and select the desired take.

RELATED LINKS
Lanes, Takes, and Overlapping Events on page 170

Track Folding Menu

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** submenu, 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.

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 to these menu options in the **Key Commands** dialog in the **Project** category.
- If you activate **Deep Track Folding** in the **Preferences** dialog (**Editing—Project & MixConsole** page), track folding is applied to all subelements of the tracks.

Events Display 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**

     Always displays data blocks or event details.
   - **Never Show Data**

     Displays nothing.
   - **Hide Data When Expanded**

     Hides the display of events when you open folder tracks.
   - **Show Event Details**

     Displays event details instead of data blocks.

   NOTE

   You can change these settings in the **Preferences** dialog (**Event Display—Folders** page).

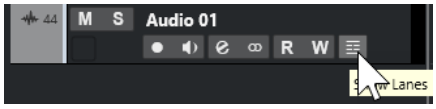
RELATED LINKS
Event Display - Folders on page 1137

Lanes, Takes, and Overlapping Events

In the following, we focus on cycle recordings with takes. However, you can also apply lane operations and comping methods to 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.



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**Solo** button of the main track.

Assembling a Perfect Take

You can play back, split, 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 the front to select it for playback, and listen to it.
3. Audition different takes to compare them in more detail.
4. If necessary, split your takes into smaller sections, create new ranges, and bring them to the 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 to 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 otherwise 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, deactivate **Treat Muted Audio Events like Deleted** in the **Preferences** dialog (**Editing—Audio** page).

You can perform the following operations:

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.
Comping (create a new range and bring it to the front, **Project** window only)	Click and drag on a lane. All takes are split at the start and end of the range. If the audio takes are adjacent, without gaps or fades, and if the material itself matches, the takes are merged within the range.	-

Operation	Comp tool	Object Selection/Range Selection tool
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 accidentally create overlaps.	Drag the resize handles.
Correct timing (**Slip Event**)	Select a take, hold down **Alt/Opt**-**Shift** (the tool modifier for **Slip Event**), and drag with the mouse.	See left.
Split	**Alt/Opt**-click on a take. If you split a MIDI part and the split position intersects one or several MIDI notes, the result depends on the **Split MIDI Events** option in the **Preferences** dialog (**Editing—MIDI** page).	See left.
Adjust splits	Position the mouse pointer over a split and drag to the left or to the right.	See left.
Gluing splits	Bring a new range to front.	Select a range spanning all the splits that you want to glue, and double-click.

RELATED LINKS
Splitting Events on page 206

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 **Inspector**, click **Switch time base between Musical and Linear** to change the time base.

RESULT

Musical time base is indicated by a note symbol .

Linear time base is indicated by a clock symbol .

NOTE

Switching between linear and musical time base results in a very small loss of positioning precision. Therefore, avoid switching repeatedly between the two modes.

RELATED LINKS

Editing Tempo and Time Signature on page 1023
Project Tempo Modes on page 1023

Track Versions

Track versions allow you to create and manage multiple versions of events and parts on the same track.

Track versions are available for audio tracks, MIDI tracks, instrument tracks, sampler tracks, and video tracks. You can also have track versions of the chord track, the signature track, and the tempo track.

Track versions 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

Track versions are not available for automation tracks.

Track versions are included in track archives and project backups.

The track version key commands can be found in the **Track Versions** category of the **Key Commands** dialog.

Track Versions Pop-Up Menu

The **Track Versions** pop-up menu is available for all track types that support track versions. It contains the most important functions for managing track versions and a track versions list.

- To open the **Track Versions** pop-up menu for a track, click the arrow to the right of the track name.

The following options are available:

Track Version list

Lists all track versions of the track for which you opened the **Track Versions** pop-up menu and allows you to activate a track version.

New Version

Creates a new, empty track version for all selected tracks.

Duplicate Version

Creates a copy of the active track version for all selected tracks.

Rename Version

Opens a dialog that allows you to change the track version name for the selected tracks.

Delete Version

Deletes the active track version for all selected tracks. This is only available if the track has more than one track version.

Select Tracks with Same Version ID

Selects all tracks that have a track version with the same ID.

Show Version Name in Track List

Shows/Hides the version name next to the track name in the track list.

Track Versions Section

The **Track Versions** section in the **Inspector** allows you to view and manage track versions for a selected track. It is available for audio tracks, MIDI tracks, instrument tracks, sampler tracks, video tracks, and the chord track.

- To open the **Track Versions** section for a track, select the track. In the **Inspector**, click the **Track Versions** section.

Track Version Indicator

Indicates that more than one track version exists.

Name

Shows the version name. Double-click to change it. The name will be changed for all selected tracks.

ID

Shows the track version ID.

Track Version list

Lists all track versions and allows you to activate one of them for all selected tracks.

Add new Track Version

Creates a new, empty track version for all selected tracks.

Duplicate active Track Version

Creates a copy of the active track version for all selected tracks.

Delete active Track Version

Deletes the active track version for all selected tracks. This function is only available if the track has more than one track version.

Creating New Track Versions

You can create new, empty track versions for selected tracks.

PROCEDURE

1. In the track list, select the tracks for which you want to create a new track version.
2. Select **Project** > **Track Versions** > **New Version**.

   NOTE

   You can also use the **Track Versions** section in the **Inspector** (only available for audio tracks, MIDI tracks, instrument tracks, sampler tracks, video tracks, and the chord track) or the **Track Versions** pop-up menu in the track list to create a new track version.

RESULT

The event display shows a new, empty track version. Events of previous track versions are hidden. The track list shows a default version name.

Track Version IDs

All track versions are automatically assigned an ID. Track versions that are created together receive the same track version ID and can be selected together.

In the **Track Versions** section in the **Inspector**, the track version ID is shown in the **ID** column of the track version list.

In the track list, you can open the **Track Versions** pop-up menu to see the track version ID.

Selecting Tracks by Track Version ID

You can simultaneously select all tracks that share the same track version ID.

PROCEDURE

1. Activate the track version.
2. Select **Project** > **Track Versions** > **Select Tracks with Same Version ID**.

RESULT

All tracks that have track versions with the same ID are selected.

Assigning a Common ID

Track versions on different tracks that were not created together have different track version IDs. Track versions 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 track versions to which you want to assign a common version ID.
2. Select **Project** > **Track Versions** > **Assign Common Version ID**.

RESULT

A new ID is assigned to all active track versions on the selected tracks. The tracks are now marked as belonging together. You can now activate them all at once.

Active Track Version

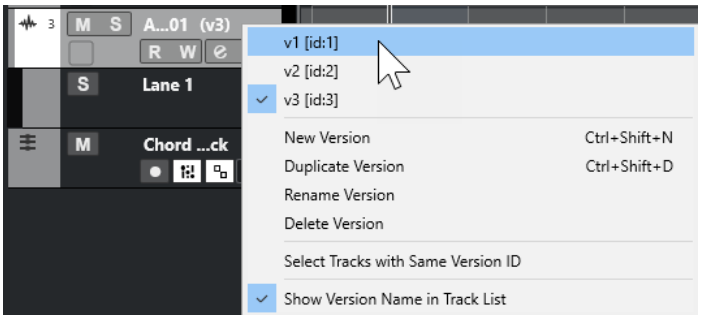
If you created more than one track version for a track, you can show the events of a specific track version in the event display. This process is referred to as activating track versions.

Activating Track Versions

You can activate one of your track versions. This also shows its events in the event display.

PROCEDURE

1. Click the arrow to the right of the track name to open the **Track Versions** pop-up menu.



2. Select the track version that you want to activate.
3. Optional: Activate **Show Version Name in Track List**.
   This shows the version name next to the track name in the track list.

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, sampler tracks, video tracks, or the chord track, you can also use the **Track Versions** section of the **Inspector** to activate a track version.

RELATED LINKS

Track Versions Pop-Up Menu on page 174

Track Version Names on page 180

Activating Track Versions on Multiple Tracks

You can simultaneously activate track versions on multiple tracks if these track versions share the same ID.

PROCEDURE

1. Select all tracks for which you want to activate a specific track version.
2. Click the arrow to the right of a track name to open the **Track Versions** pop-up menu.
3. Select the track version that you want to activate from the list.

RESULT

The selected track version 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, sampler tracks, video tracks, or the chord track, you can also use the **Track Versions** section of the **Inspector** to activate a track version.

Duplicating Track Versions

You can duplicate a track version by creating a new track version that contains a copy of the active track version.

PROCEDURE

1. In the track list, select the track, and activate the track version that you want to duplicate.
2. Select **Project** > **Track Versions** > **Duplicate Version**.

   In the event display, a duplicate track version is displayed. In the track list, a default version name for the duplicate is shown.

   NOTE

   You can also use the **Track Versions** section of the **Inspector** for audio tracks, MIDI tracks, instrument tracks, sampler tracks, video tracks, and the chord track, or the **Track Versions** pop-up menu in the track list to duplicate a track version.

Deleting Track Versions

You can delete track versions that you no longer need.

PROCEDURE

1. Select the tracks and activate the track versions that you want to delete.
2. Select **Project** > **Track Versions** > **Delete Version**.

NOTE

You can also use the **Track Versions** section of the **Inspector** for audio tracks, MIDI tracks, instrument tracks, sampler tracks, video tracks, and the chord track, or the **Track Versions** pop-up menu in the track list to delete the active track version for selected tracks.

Copying and Pasting Selection Ranges Between Track Versions

You can copy and paste ranges between different track versions, even across multiple tracks.

PREREQUISITE

You have at least 2 track versions.

PROCEDURE

1. Select the **Range Selection** tool.
2. Select a range of the track version that you want to copy.
3. Select **Edit** > **Copy**.
4. Activate the track version into which you want to insert the copied range.
5. Select **Edit** > **Paste**.

RESULT

The copied range from the first track version is pasted to the second track version at the exact same position.

NOTE

If you want to perform more complicated comping tasks, we recommend that you select **Project** > **Track Versions** > **Create Lanes from Versions** and proceed with the **Comp** tool.

Copying and Pasting Selected Events between Track Versions

You can copy and paste selected events between different track versions, even across multiple tracks.

PREREQUISITE

You have at least 2 track versions, and you have split the corresponding events with the **Split** 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 track version into which you want to insert the copied events.
5. Select **Edit** > **Functions** > **Paste at Origin**.

RESULT

The copied events from the first track version are pasted to the second track version at the exact same position.

Track Version Names

Each track version has a default track version name.

If more than one version is available for the track, the track version name is shown in the track list and in the **Track Versions** section in the **Inspector**. By default, track versions are named v1, v2, etc. However, you can rename each track version to your liking.

NOTE

You can show/hide the version name next to the track name in the track list by activating/deactivating **Show Version Name in Track List** in the **Track Versions** pop-up menu for a track.

RELATED LINKS

Track Versions Pop-Up Menu on page 174

Renaming a Track Version

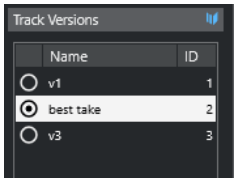
You can rename track versions.

PROCEDURE

- In the **Track Versions** section in the **Inspector**, double-click the track version name and enter a new name.

RESULT

The name is changed. If the available space in the track list is too small, the name is abbreviated automatically.



Renaming Track Versions on Multiple Tracks

You can rename track versions on multiple tracks.

PROCEDURE

1. Activate all track versions that you want to rename, and select the corresponding tracks.
2. Select **Project** > **Track Versions** > **Rename Track Version**.
3. Enter a new track version name and click **OK**.

RESULT

In the track list, the new track version name is shown.

NOTE

If you want to assign the same ID to track versions, select **Project** > **Track Versions** > **Assign Common Version ID**.

Track Versions vs. Lanes

Track versions and lanes (only available for audio tracks, MIDI tracks, instrument tracks, and sampler tracks) are individual features that complement each other. Every track version can have its own set of lanes.

Creating Lanes from Track Versions

If your project contains track versions and you want to continue working with lanes, using the **Comp** tool, for example, you can create lanes (only available for audio tracks, MIDI tracks, instrument tracks, and sampler tracks) from track versions.

PROCEDURE

1. Select the tracks for which you want to create lanes.
2. Select **Project** > **Track Versions** > **Create Lanes from Versions**.

   A new track version named **Lanes from Version** is added. This track version contains all track versions on separate lanes. The original track versions are kept. Lanes that you create from MIDI track versions 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.

Creating Track Versions from Lanes

If your project contains lanes and you want to continue working with the track version functions, you can create track versions from lanes (only available for audio tracks, MIDI tracks, instrument tracks, and sampler tracks).

PROCEDURE

1. Select the tracks for which you want to create track versions.

   If you only want to convert specific lanes, select these lanes.
2. Select **Project** > **Track Versions** > **Create Versions from Lanes**.

RESULT

New track versions are added, one for each 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 any track types (audio, MIDI, instrument, sampler, group, FX, VST instrument return, input, and output channels). They contain sound and channel settings, and they allow you to quickly browse, preview, select, and change sounds, or to reuse channel settings across projects.

Track presets are organized in the **MediaBay**. There, you can categorize them with attributes.

When you apply a track preset, all the settings that are saved in the preset are applied.

Track presets can only be applied to tracks of their own type. 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 the removal of modifiers, MIDI inserts, inserts, or EQs. These settings are not stored in VST presets.

Audio Track Presets

Track presets for audio tracks, group tracks, FX tracks, VST instrument channels, input channels, and output channels include all the 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 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.

MIDI Track Presets

You can use MIDI track presets for multitimbral VST instruments.

When creating MIDI track presets, you can either include the channel or the patch.

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

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 642

Loading Presets for Tracks

You can choose from a variety of track presets.

PROCEDURE

1. In the **Inspector**, open the **Inserts** section.
2. Right-click the **Inserts** section header, and select **From Track Preset**.
3. In the **Results** browser, double-click a track preset to apply it.

RELATED LINKS

Track Presets on page 181

Loading Presets for VST Instruments

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 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 to audition your tracks or to save your preferred sound settings, for example. You can also extract sounds from instrument track presets to use them 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

VST Presets

VST instrument presets behave like instrument track presets. You can extract sounds from VST presets to use them 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.

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**, open the **Routing** section.
3. Click **Extract Sound from Track Preset** .
4. In the preset browser, select an instrument track preset or a VST preset.

5. 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. The new VST instrument is set up for the instrument track.

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 a single 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.

Loading Multi-Track Presets

You can apply multi-track presets to several selected tracks.

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 a 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.

Sampler Track Presets

You can use sampler track presets to reuse 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

RELATED LINKS
Sampler Tracks and Channels on page 113

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 to 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 of the sampler track presets folder.

RELATED LINKS
Creating a Track Preset on page 183

Pattern Banks

Pattern banks are presets that are created for the **Beat Designer** MIDI effect.

They behave similarly to track presets.

RELATED LINKS
Pattern Banks Previewer on page 637
Track Presets on page 181

Loading Track or VST Presets

You can apply track or VST presets to selected tracks.

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 track presets from the **MediaBay** or from the File Explorer/macOS Finder onto a track of the same type.

RELATED LINKS

Filters Section on page 637

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, and in the **Inspector** or the **Channel Settings** window, open the **Inserts** or the **Equalizer** section.
2. Right-click the section header, and select **From Track Preset**.
3. In the preset browser, select a track preset.
4. Double-click the preset to load the settings.

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.

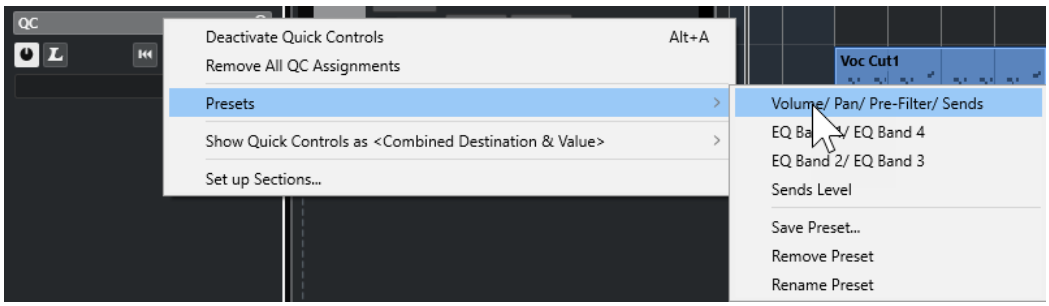
Saving/Loading Track Quick Control Assignments as Presets

You can save track quick control assignments as presets and load them later or in other projects.

PROCEDURE

1. In the **Inspector** for your track, open the **QC** section.

   For instrument tracks, the track quick controls are set to the 8 default VST quick controls of the loaded instrument by default.
2. Right-click the **QC** section header, and from the **Presets** submenu, 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, you can view and edit most event types on their specific tracks in the **Project** window.

You can add events by importing or recording.

RELATED LINKS
Audio Regions on page 191
MIDI Events on page 192

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 35
Sample Editor on page 464
Audio Files and Audio Clips on page 190
Basic Recording Methods on page 263

Creating Audio Events

You can create audio events by recording or importing audio into the **Project** window.

PROCEDURE

- Do one of the following:
  - Record some audio.
  - Select **File** > **Import** > **Audio File** to import an audio file from your hard disk or from 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 audio from a video file on your hard disk or from any external storage device.
  - Drag an audio file from the **MediaBay**, the **Audio Part Editor**, or the **Sample Editor**, 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 263
Audio File Import on page 285
Importing Audio CD Tracks on page 288
Importing Audio from Video Files on page 291
MediaBay and Media Rack on page 610
Audio Part Editor on page 541
Sample Editor on page 464

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 of 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 306

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 588
Audio Regions on page 191
Replacing Clips in Events on page 191

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/macOS Finder, and drop it onto the event.
  - Click a clip in the **Pool**, hold down **Shift**, and drop it onto 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 595

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 an individual 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 because different events that refer to the same clip access the same clip information.

RELATED LINKS
Pool on page 588
Regions List on page 481

Creating Regions

You can create regions from several selected audio events or from selection ranges.

PROCEDURE

1. Select several audio events or selection ranges.
2. Select **Audio** > **Advanced** > **Event or Range as Region**.
3. In the **Create Regions** dialog, enter a name for the regions, and click **OK**.

RESULT

A region is created in the corresponding clip, with the start and the end position of the region determined by the start and the end position of the event or selection range within the clip.

RELATED LINKS
Creating Regions on page 482

Creating Events from Regions

You can create events from regions, which replace the original event.

PROCEDURE

1. Select an audio event whose clip contains regions within the boundaries of the event.
2. Select **Audio** > **Advanced** > **Events from Regions**.

RESULT

The original event is removed and replaced by events positioned and sized according to the regions.

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 35
In-Place Editor on page 893
List Editor on page 878
Key Editor on page 814
Drum Editor on page 857
Score Editor on page 844
Basic Recording Methods on page 263

Creating MIDI Events

You can create MIDI events by recording or importing MIDI into the **Project** window.

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/macOS Finder, from one of the MIDI editors, or from the **MediaBay**, and drop it into 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 263
Importing MIDI Files on page 293
MIDI Editors on page 779
MediaBay and Media Rack on page 610

Parts

Parts are containers for MIDI or audio events and for tracks.

RELATED LINKS
Audio Parts on page 193
MIDI Parts on page 193
Folder Parts on page 194

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/Opt**, 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**.

RELATED LINKS
Audio Part Editor on page 541

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/Opt**, 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 the 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 on a folder part affects all the events and parts it contains. Tracks inside a folder can be edited as one entity.

NOTE

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
Event Colors Menu on page 780

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 on the info line.
- By using a key command.

NOTE

Snap is taken into account.

RELATED LINKS
Editing Tool Modifiers on page 1133

Auditioning Audio Parts and Events

You can audition audio parts and events in the **Project** window by using the **Audition** tool.

PROCEDURE

1. On the **Project** window toolbar, click **Play** and select **Play**.
2. Click where you want playback to start, and keep the mouse button pressed.

3. Optional: Select **Media** > **MediaBay**, and in the **Previewer** section, adjust the **Preview Level**.

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

RELATED LINKS

Project Window Toolbar on page 38
Previewer Section on page 632

Scrubbing

The **Scrub** tool allows you to locate positions in events by playing back, forwards or backwards.

PROCEDURE

1. On the **Project** window toolbar, click **Play**.
2. Click 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.

RELATED LINKS

Project Window Toolbar on page 38

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 with 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** or **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.

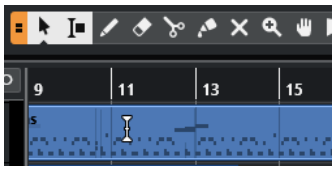
RELATED LINKS
Project Window Toolbar on page 38
Event Display on page 1135

Combine Selection Tools Mode

The **Combine Selection Tools** mode allows you to combine the **Object Selection** tool and the **Range Selection** tool. This is useful in situations where you often switch between these tools.

If you activate **Combine Selection Tools** on the **Project** window toolbar and the track height is set to at least 2 rows, the vertical track height of each track is divided into two areas. The mouse pointer changes automatically from **Object Selection** to the **Range Selection** tool and vice versa, according to the track area where you click.

- If you move the mouse pointer to the upper area of the track, the **Range Selection** tool is activated, and you can select ranges that are independent from event and part boundaries.



- If you move the mouse pointer to the lower area of the track, the **Object Selection** tool is activated, and you can select entire events or parts.

NOTE

You can also activate/deactivate the **Combine Selection Tools** mode by pressing **Alt** - **Shift** - **1**.

RELATED LINKS
Project Window Toolbar on page 38
Setting the Track Height on page 164
Creating Selection Ranges on page 215
Resizing Events with the Object Selection Tool - Normal Sizing on page 203
Resizing Events with the Object Selection Tool - Sizing Moves Contents on page 203
Resizing Events with the Object Selection Tool - Sizing Applies Time Stretch on page 204

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 in the **Project** window.

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 end to the left of the project cursor.

From Cursor to End

Selects all events that start to the right of the project cursor.

Equal Pitch all Octaves/Equal Pitch 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 Selection Side to Cursor/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

Event Display on page 1135
Range Editing in the Project Window and in the Editors on page 215

Removing Events

You can remove events from the **Project** window.

PROCEDURE

- To remove an event from the **Project** window, do one of the following:
  - On the **Project** window toolbar, activate **Erase** and click the event.
  - In the event display, select the events and select **Edit** > **Delete**.
  - In the event display, select the events and press **Backspace**.

RELATED LINKS

Project Window Toolbar on page 38

Event Movement Options

Cubase provides several methods to move events in the **Project** window.

You can move events using any of the following methods:

- Use the **Object Selection** tool.
- Use the **Nudge** buttons.
- Select **Edit** > **Move**, and select one of the options.
- Select the event, and edit the start position on the info line.
- Select multiple events, and use the **Set Spacer Between Selected Events** function.

RELATED LINKS
Moving Events with the Object Selection Tool on page 198
Moving Events with the Nudge Buttons on page 198
Move Submenu on page 201
Moving Events via the Info Line on page 201
Setting Spacers between Events on page 201

Moving Events with the Object Selection Tool

You can select one or several events with the **Object Selection** tool and drag them to a new position.

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, when you move an event by dragging, the response is slightly delayed. You can adjust this delay with the **Drag Delay** setting in the **Preferences** dialog (**Editing** page).

Moving Events with the Nudge Buttons

You can move one or several selected events by using the nudge buttons on the **Project** window toolbar.

PREREQUISITE

You have activated the **Nudge** section in the **Project** window toolbar.

PROCEDURE

1. Click the points to the right of the **Nudge** section.

The **Nudge** buttons become available.

2. In the event display, select the events that you want to move, and do one of the following:
   - Click **Move Left** or use the corresponding key command **Ctrl/Cmd** - **Left Arrow** to move the events to the left.
   - Click **Move Right** or use the corresponding key command **Ctrl/Cmd** - **Right Arrow** to move the events to the right.

RESULT

The selected events or parts are moved.

RELATED LINKS

Setting up a Snap Grid for Nudge Operations on page 199
Project Window Toolbar on page 38
Snap Grid on page 84
Ruler on page 48
Ruler Display Format Menu on page 49
Grid Type Menu on page 82

Setting up a Snap Grid for Nudge Operations

You can set up an independent snap grid just for nudge operations. This way, you can perform all editing with the mouse using a musical (tempo-related) grid that is set to **Bars+Beats** while all nudge operations and corresponding key commands are based on a linear (time-related) grid.

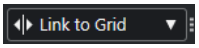
PREREQUISITE

The primary time format on the **Transport** panel is set to **Bars+Beats**. Your project contains some parts or events that you want to move to a time-related position.

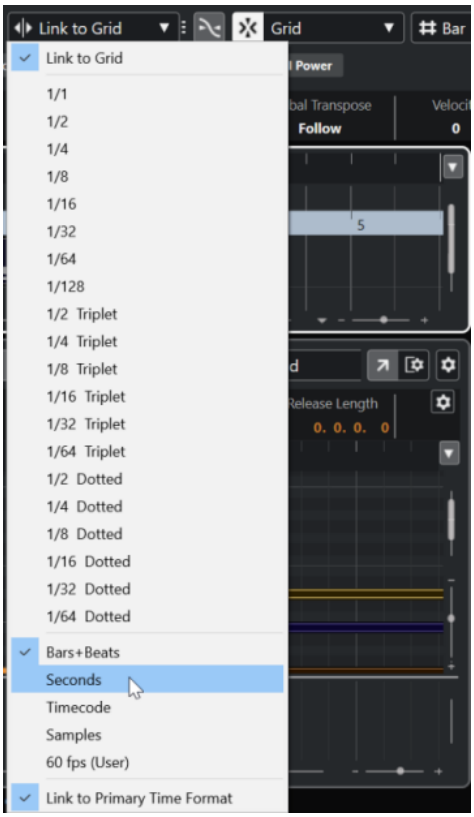
PROCEDURE

1. Right-click the **Project** window toolbar and activate **Nudge**.

   The **Nudge Settings** become available on the toolbar.

2. Open the **Nudge Settings** pop-up menu to select a time-related format for your nudge operations.



The settings **Link to Grid** and **Link to Primary Time Format** are deactivated.

3. Optional: Select **Project** > **Add Track** > **Ruler** to add a ruler track. In the track list for the ruler track, select the same display format as for your nudge operations.

   This is not necessary, but it helps you to get visual control over your nudge operations.

4. On the **Project** window toolbar, click the points to the right of the **Nudge Settings** section.

   The **Nudge** buttons become available.

5. In the event display, select the events or parts that you want to move, and do one of the following:

   - To nudge the events to the left, click **Move Left** or use the corresponding key command **Ctrl/Cmd** - **Left Arrow**.
   - To nudge the events to the right, click **Move Right** or use the corresponding key command **Ctrl/Cmd** - **Right Arrow**.

RESULT

The selected events or parts that you nudged are moved. They snap to the linear grid that you set in the **Nudge Settings** pop-up menu. If you now move some events or parts using the mouse, these will snap to the musical grid that you set with the primary time format.

RELATED LINKS

Selecting the Primary Time Format on page 246
Ruler Track Controls on page 121
Snap Grid on page 84
Nudge on page 42
Moving Events with the Nudge Buttons on page 198
Resizing Events with the Nudge Buttons on page 204

Resizing Events Using the Nudge Settings on page 205

Move Submenu

If the **Object Selection** tool is selected, the **Move** submenu features options for moving events to specific positions in the **Project** window.

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

The following options are available:

Event Starts to Cursor

Moves the starts of the selected events to the project cursor position. If you selected several events on the same track, the subsequent events keep their relative position.

Event Ends to Cursor

Moves the ends of the selected events to the project cursor position. If you selected several events on the same track, the subsequent events keep their relative position.

Events to Origin

Moves the selected events to the positions at which they were originally recorded.

Events to Selected Track

Moves the selected events to separate tracks, starting on the selected track. The events are placed at their current positions.

Events to Front

Moves the selected events to the front. This is useful if you have overlapping audio events and you want to play back another event.

Events to Back

Moves the selected events to the back. This is useful if you have overlapping audio events and you want to play back another event.

Moving Events via the Info Line

You can move a selected event by changing its start value on 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.

Setting Spacers between Events

You can rearrange multiple events on a track so that they are at a specified distance from each other.

PREREQUISITE

- A track contains multiple events.
- The events are not locked.

PROCEDURE

1. Select all events that you want to rearrange.
2. Select **Edit** > **Functions** > **Set Spacer between Selected Events**.
3. Set the **Spacer in Seconds** value.
4. Click **OK**.

RESULT

All selected events on the track are at the specified distance from each other.

NOTE

- Grouped events are handled like single events.
- This function does not work for automation and signature tracks.

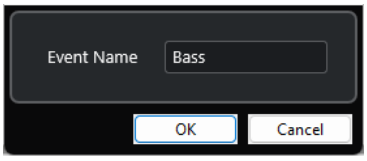
RELATED LINKS

Locking Events on page 212
Grouped Events on page 211

Renaming Events

PROCEDURE

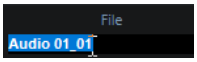
- Do one of the following:
  - Select the events, select **Edit** > **Rename** > **Rename Selected Events**, and type the new name into the text field of the **Rename Selected Events** dialog.



    NOTE

    Alternatively, you can open the **Rename Selected Events** dialog via a key command (by default **F2**) or the context menu.

  - Select the events, and type a new name into the **File** field on the info line.



  - Change the track name, hold down a modifier key, and press **Return** to rename all events according to the track.

Event Resize Options

You can resize events by moving their start or end positions individually.

To resize events, you can use the **Object Selection**, the **Scrub** tool or the **Nudge** buttons.

Resizing also works if the **Combine Selection Tools** mode is active.

IMPORTANT

When resizing events, automation data is not taken into account.

RELATED LINKS
Combine Selection Tools Mode on page 196
Resizing Events with the Object Selection Tool - Normal Sizing on page 203
Resizing Events with the Object Selection Tool - Sizing Moves Contents on page 203
Resizing Events with the Object Selection Tool - Sizing Applies Time Stretch on page 204
Resizing Events with the Nudge Buttons on page 204
Resizing Events with the Scrub Tool on page 206
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.

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.

NOTE

If your event contains fades and you want to adapt their length while sizing the event, hold down **Ctrl/Cmd** - **Alt/Opt**.

RESULT

The event is resized and, depending on where you dragged, more or less of the content is revealed. If several events are selected, they are all resized in the same way.

RELATED LINKS
Project Window Toolbar on page 38
Editing - Tool Modifiers on page 1132

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.

RELATED LINKS

Project Window Toolbar on page 38

Resizing Events with the Object Selection Tool - Sizing Applies Time Stretch

You can move the start or the 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 448
Project Window Toolbar on page 38

Resizing Events with the Nudge Buttons

You can change the start or the end position of events. The setting on the **Grid Type** pop-up menu applies.

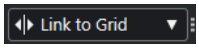
PREREQUISITE

The **Object Selection** tool is set to **Normal Sizing** or **Sizing Moves Contents**.

PROCEDURE

1. Right-click the **Project** window toolbar and activate **Nudge**.

   The **Nudge Settings** become available on the toolbar.

2. Click the points to the right of the section.

   The **Nudge** buttons become available.

3. Select the event.
4. Do one of the following:
   - Click **Nudge Start Left** or use the corresponding key command **Alt/Opt** - **Left Arrow** to move the event start to the left.
   - Click **Nudge Start Right** or use the corresponding key command **Alt/Opt** - **Shift** - **Right Arrow** to move the event start to the right.
   - Click **Nudge End Left** or use the corresponding key command **Alt/Opt** - **Shift** - **Left Arrow** to move the event end to the left.
   - Click **Nudge End Right** or use the corresponding key command **Alt/Opt** - **Right Arrow** to move the event end to the right.

RESULT

The start or end position of the selected events is moved, and the setting on the **Grid Type** pop-up menu applies.

RELATED LINKS

Project Window Toolbar on page 38
Resizing Events Using the Nudge Settings on page 205
Setting up a Snap Grid for Nudge Operations on page 199
Ruler on page 48
Ruler Display Format Menu on page 49
Grid Type Menu on page 82

Resizing Events Using the Nudge Settings

You can move the start or the end position of events. The setting on the **Nudge Settings** pop-up menu applies.

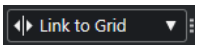
PREREQUISITE

The **Object Selection** tool is set to **Normal Sizing** or **Sizing Moves Contents**.

PROCEDURE

1. Right-click the **Project** window toolbar and activate **Nudge**.

   The **Nudge Settings** become available on the toolbar.

2. Open the **Nudge Settings** pop-up menu, and activate a format and a value for your operations.
3. Click the points to the right of the section.

   The **Nudge** buttons become available.

4. Select the event.
5. Do one of the following:
   - Click **Nudge Start Left** or use the corresponding key command **Alt/Opt** - **Left Arrow** to move the event start to the left.

- Click **Nudge Start Right** or use the corresponding key command **Alt/Opt** - **Shift** - **Right Arrow** to move the event start to the right.
- Click **Nudge End Left** or use the corresponding key command **Alt/Opt** - **Shift** - **Left Arrow** to move the event end to the left.
- Click **Nudge End Right** or use the corresponding key command **Alt/Opt** - **Right Arrow** to move the event end to the right.

RESULT

The start or the end position of the selected events is moved, and the setting on the **Nudge Settings** pop-up menu applies.

RELATED LINKS

Setting up a Snap Grid for Nudge Operations on page 199
Selecting the Primary Time Format on page 246
Snap Grid on page 84
Resizing Events with the Nudge Buttons on page 204

Resizing Events with the Scrub Tool

You can scrub the event when moving the start or the 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.

RELATED LINKS

Project Window Toolbar on page 38

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/Opt**, 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 all events on all tracks that are intersected by the project cursor. If you select specific events, only these events 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 all events on all tracks that are intersected by the locators. If you select specific events, only these events 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 **Split MIDI Events** is deactivated, the notes remain in the first part, but stick out after the end of the part.

RELATED LINKS

Project Window Toolbar on page 38

Splitting Events Repeatedly

You can repeatedly split events into multiple events of equal size.

PROCEDURE

- Select **Split**, hold down **Alt/Opt**, and click the event where you want to make the first split.

RESULT

The event is automatically split into as many equal events as the length of the original event allows.

Using Cut Head and Cut Tail

You can cut everything to the left or right of the cursor or a selected range.

PROCEDURE

- Do one of the following:
  - Select **Edit** > **Range** > **Cut Head** to delete everything to the left of the cursor/selection range.
  - Select **Edit** > **Range** > **Cut Tail** to delete everything to the right of the cursor/selection range.

Gluing Events

In the **Project** window, you can glue two or more events on the same track.

PROCEDURE

- Do one of the following:
  - Select the events that you want to glue, and select **Edit** > **Glue**.
  - Select **Glue**, and click the event that you want to glue to the next event.

- Select **Glue**, hold down **Alt/Opt**, 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.

RELATED LINKS

Project Window Toolbar on page 38

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 events while keeping their 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.

Pasting Events to Matching Track Names

You can copy events in one project and paste them at the first track that matches the exact track name in another project.

PROCEDURE

1. Copy the events in one project.
2. Activate the project where you want to paste the events.
3. Select **Edit** > **Functions** > **Paste to Matching Track Name**.

RESULT

The events are inserted on the track with the name that exactly matches the original track name.

For all events that have no matching track name, new tracks are created.

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/Opt**, and drag the event to a new position.

    NOTE

    If you hold down **Ctrl/Cmd** as well, direction of the movement 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, which allows you to create a number of real or shared copies of the selected events.
  - Select the events, hold down **Alt/Opt**, 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/Opt** - **Shift**, and drag to the right to create a shared copy.

    NOTE

    This applies to MIDI events only.

  - 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

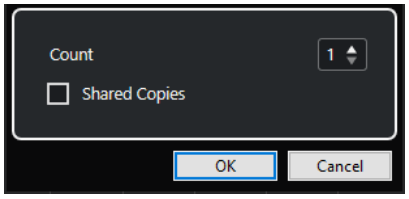
  Repeating by dragging only works if the track has a height of at least 2 rows.

RELATED LINKS
Shared Copies on page 210
Repeat Events Dialog on page 210
Setting the Track Height on page 164

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 an event, and select **Edit** > **Functions** > **Repeat**.



Count

Allows you to specify how many times you want the event to be repeated.

Shared Copies

Activate to create a shared copy.

RELATED LINKS
Shared Copies on page 210

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 create shared copies by using the **Repeat Events** dialog.

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 209
Repeat Events Dialog on page 210

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.

Moving the Contents of Events

You can move the content of an event without changing its position in the **Project** window.

PROCEDURE

- Hold down **Ctrl/Cmd** - **Alt/Opt**, click the event, and drag to the left or right.

NOTE

You can change the default modifier key for **Slip Event Content** in the **Select Tool** category of the **Preferences** dialog (**Editing–Tool Modifiers** page).

RESULT

The content of the event is moved.

NOTE

- You cannot move the content of an audio event past the start or the end of the actual audio clip. If the event plays the whole clip, you cannot move the content at all.
- You can set up key commands for **Slip Event Content Left** and **Slip Event Content Right** in the **Edit** category of the **Key Commands** dialog to move the content of events to the left or to the right.

RELATED LINKS

Setting up Tool Modifier Keys on page 1113

Grouping Events

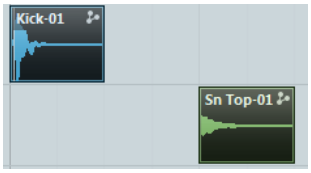
You can treat several events on the same or different tracks as one unit by grouping them.

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, this affects all other events in the group as well.

Group editing operations include:

- Selecting
- Moving and duplicating
- Resizing
- Adjusting fade-in and fade-out (audio events only)
- Splitting
- Locking
- Muting
- Deleting

RELATED LINKS
Fades, Crossfades, and Envelopes on page 306

Locking Events

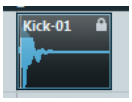
If you want to make sure that you do not edit or move an event by accident, you can lock it.

PROCEDURE

- Do one of the following:
  - Select the events, and select **Edit** > **Lock** to lock the selected events.
  - Click the padlock button 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.

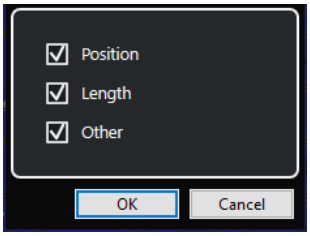


To unlock an event, select the event and select **Edit** > **Unlock**.

Lock Event Attributes Dialog

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

Activate this to prevent the event from being moved.

Length

Activate this to prevent the event from being resized.

Other

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 1128

Inverting the Phase of Audio Events

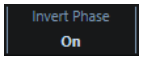
You can invert the phase of audio events in the **Project** window.

PROCEDURE

1. In the **Project** window, select one or multiple audio events.
2. On the info line, click the **Invert Phase** field.

RESULT

The phase of the events is inverted. This is reflected on the info line.



RELATED LINKS

Info Line on page 51

Muting Events

You can mute events in the **Project** window. Muted events can be edited as usual, with the exception of adjusting fades, but they cannot be played back.

PROCEDURE

- Do one of the following:
  - Select the **Mute** tool, 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**.

RELATED LINKS

Project Window Toolbar on page 38

Exporting MIDI Parts as MIDI Files

You can export MIDI parts as MIDI files.

PROCEDURE

1. In the **Project** window, select the MIDI part that you want to export.
2. Drag the MIDI part to the File Explorer/macOS Finder.

RESULT

A corresponding MIDI file is exported. The **Export Options** for MIDI files are taken into account.

RELATED LINKS

Export Options Dialog for MIDI Files on page 158

WaveLab as External Editor for Cubase

You use can WaveLab Pro or WaveLab Elements as an external editor for Cubase audio parts and events. This allows you to use the editing capabilities of WaveLab and apply them to Cubase events.

NOTE

This function is only available for WaveLab Pro 9.0 or higher, or WaveLab Elements 9.0.

RELATED LINKS

Editing Cubase Audio Events in WaveLab Pro/WaveLab Elements on page 214

Editing Cubase Audio Events in WaveLab Pro/WaveLab Elements

You can open Cubase events in WaveLab Pro or WaveLab Elements, use the editing functions of WaveLab, and apply the edited audio to your Cubase project.

PREREQUISITE

You have installed WaveLab Pro 9.0 or higher, or WaveLab Elements 9.0 or higher on your computer.

PROCEDURE

1. In the **Project** window, select the audio event that you want to edit in WaveLab Pro/WaveLab Elements.

   You can also select only a part of the audio event with the **Object Selection** tool.
2. Select **Audio** > **Edit in WaveLab**.

   The audio event is opened in WaveLab.
3. In WaveLab Pro/WaveLab Elements, edit the audio event.
4. When you have finished the editing, click **Trigger Cubase/Nuendo Update** on the WaveLab Pro/WaveLab Elements command bar.

RESULT

The changes to the audio event are applied to the Cubase project.

Range Editing in the Project Window and in the Editors

Editing is not restricted to handling whole events and parts. You can also work with selection ranges, which can be independent from event, part, and track boundaries.

You can select only one range at a time.

Creating Selection Ranges

You can create selection ranges in the **Project** window, the **Sample Editor**, the **Audio Part Editor**, the **Key Editor**, or the **Drum Editor**.

PROCEDURE

1. Select the **Range Selection** tool on the **Project** window, **Sample Editor**, **Audio Part Editor**, **Key Editor**, or **Drum Editor** toolbar.
2. Optional: Activate **Snap**, and select a **Snap Type** option.

   This ensures that the range start and the range end snap to the set snap type option.
3. Optional: On the **Project** window, **Sample Editor,** or **Audio Part Editor** toolbar, activate **Snap to Zero Crossing**.

   This ensures that the start and the end of a selection of audio material are always at zero crossings.
4. Do one of the following:
   - Click at the position in the event display where you want the range to start, and drag to the position where you want the range to end.
   - Double-click an event to create a selection range that encompasses it.

     NOTE

     To create a selection range that encompasses multiple events, hold down **Shift**, and double-click several events in a row.
   - Select **Edit** > **Select**, and select one of the menu functions.

     NOTE

     If you are working with audio in the **Project** window, the **Sample Editor**, or the **Audio Part Editor**, you can select one of the hitpoint-related commands. This allows you to enlarge/reduce the range or to move it to the next/previous hitpoint.

RESULT

The selected range is highlighted in the event display, and the **Range Start**, **Range End**, and **Range Length** are shown on the info line.

RELATED LINKS
Adjusting the Size of Selection Ranges on page 218
Selection Range Editing Specifics on page 216
Switching from Range Selection to other Tools on page 216
Combine Selection Tools Mode on page 196
Hitpoints on page 487

Selecting Ranges Covering Several Tracks

You can create selection ranges that cover several tracks. It is also possible to include or exclude tracks.

PROCEDURE

1. With the **Range Selection** tool, select a range that covers several tracks.
2. Optional: To include or exclude tracks, press **Ctrl/Cmd** and select the tracks.

Switching from Range Selection to other Tools

When you create a selection range with the **Range Selection** tool, you can switch tools, and the events stay selected.

PROCEDURE

1. Select a range with the **Range Selection** tool.
2. Select the **Object Selection** tool or any other tool.

RESULT

The events that are part of the selected range stay selected. This way, you can transpose or nudge MIDI events in the MIDI editors, for example.

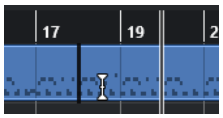
RELATED LINKS
Creating Selection Ranges on page 215

Selection Range Editing Specifics

You can edit selection ranges, for example, adjust their size, split them, move them, or duplicate their contents.

General Rules

- When editing selection ranges, snap and quantize are taken into account. The snap types **Events**, **Cursor**, and their combinations are supported.
- When the **Range Selection** tool is selected, you can adjust the **Range Start**, the **Range End**, and the **Range Length** on the info line.
- When editing selection ranges on multiple parts/tracks, **Part Editing Mode** is taken into account.
- By clicking in the event display with the **Range Selection** tool, you define the **Range Start**. If you do not define a **Range End**, the selection range has a length of zero. This is indicated on the info line and by the range selection cursor.



NOTE

In the **Range Selection Cursor** section of the **Preferences** dialog (**Editing**—**Tools** page) you can set up the colors for the line of the range selection cursor, as well as its width. You can also show an outline for the cursor.

Selection Ranges Including Audio

- If you edit a selection range that contains audio material in the **Sample Editor**, the **Audio Part Editor**, or the **Project** window, activate **Snap to Zero Crossing** on the corresponding toolbar to restrict editing to zero crossings, that is, positions where the amplitude is zero.

Selection Ranges Including MIDI

- If you edit a selection range that contains MIDI notes in the **Key Editor**, the **Drum Editor**, or the **Project** window, all MIDI note events that intersect at the start or the end of the selection range are split.

  NOTE

  - In the **Project** window, notes are only split if **Split MIDI Events** is activated in the **Preferences** dialog (**Editing**—**MIDI** page).
  - If you edit selection ranges in the **Drum Editor**, activate **Show Note Length On/Off** on the toolbar to show the note length in the event display. This allows you to see if a note is split or not. The diamond symbols do not reflect the actual note length. If you want to work with the diamond symbols, use the info line to see the actual start and end values of a selected symbol.

- If you edit a selection range that intersects with a controller curve, additional controller events are created at the range start and the range end. This ensures that the area outside the range is not edited. The controller event editor is also available for selection ranges on controller lanes.

  NOTE

  Selection ranges including MIDI can also contain data on controller lanes and articulations, even if these are not shown. If you activate **Full Vertical** in the **Selection Mode** field on the info line, your selection is expanded to cover all events, including events on hidden controller lanes.

RELATED LINKS
Project Window Toolbar on page 38
Sample Editor Toolbar on page 465
Audio Part Editor Toolbar on page 542
Expanding Selection Ranges Vertically (MIDI only) on page 219
Key Editor Toolbar on page 815
Drum Editor Toolbar on page 859
Drum Editor Info Line on page 867
Drum Editor Note Display on page 869
Controller Display on page 789
Controller Event Editor on page 811

Range Selection Cursor on page 1134
Editing - Tools on page 1134

Adjusting the Size of Selection Ranges

You can adjust the size of a selection range horizontally, that is, its start and its end. You can also adjust the selection range vertically to determine how many tracks or lanes it encompasses.

PREREQUISITE

You have created a selection range.

CHOICES

- Drag the edges of the selection range horizontally.
- Drag the edges of the selection range vertically.
- Hold down **Shift**, and click where you want to extend/reduce the size of the selection range.

  The closest selection range edge is moved to the position at which you clicked.
- On the info line, adjust the values for **Range Start**, **Range End**, and **Range Length**.
- **Audio Part Editor** and **Project** window only: On the info line, adjust the values for **Top Track** or **Bottom Track**.
- Use the buttons **Nudge Start Left**, **Nudge Start Right**, **Nudge End Left**, or **Nudge End Right** in the **Nudge** section of the corresponding toolbar.

  The edges are moved by the amount specified on the **Grid** pop-up menu or by the amount set on the **Nudge Settings** pop-up menu.
- Use the key commands in the **Nudge** category of the **Key Commands** dialog:
  - Use **Alt/Opt** - **Left Arrow**, the default key command for **Nudge Start Left**.
  - Use **Alt/Opt** - **Right Arrow**, the default key command for **Nudge Start Right**.
  - Use **Alt/Opt** - **Shift** - **Left Arrow**, the default key command for **Nudge End Left**.
  - Use **Alt/Opt** - **Shift** - **Right Arrow**, the default key command for **Nudge End Right**.
  - **Audio Part Editor** and **Project** window only: Use **Alt/Opt** - **Down Arrow**, the default key command for **Nudge Bottom Down**.
  - **Audio Part Editor** and **Project** window only: Use **Alt/Opt** - **Shift** - **Up Arrow**, the default key command for **Nudge Bottom Up**.
  - **Audio Part Editor** and **Project** window only: Use **Alt/Opt** - **Shift** - **Down Arrow**, the default key command for **Nudge Top Down**.
  - **Audio Part Editor** and **Project** window only: Use **Alt/Opt** - **Up Arrow**, the default key command for **Nudge Top Up**.

RELATED LINKS

Nudge Category on page 1106
Moving Events with the Nudge Buttons on page 198
Resizing Events with the Nudge Buttons on page 204
Resizing Events Using the Nudge Settings on page 205
Nudge on page 42
Lanes on page 548

Expanding Selection Ranges Vertically (MIDI only)

You can expand a selection range vertically.

PROCEDURE

1. Select the **Range Selection** tool on the **Key Editor** or the **Drum Editor** toolbar.
2. Do one of the following:
   - To select a range that encompasses note events or controller events, click at the position in the event display or in the controller lane where you want the range to start, and drag horizontally, to the position where you want the range to end.
3. Do one of the following:
   - To include/exclude a single controller lane, press **Ctrl/Cmd** and click the corresponding controller lane.
   - To expand the selection by multiple controller lanes, press **Shift** and click the corresponding controller lane.
   - To expand the selection to note events, press **Shift** and click in the event display.
   - To expand the selection to all events, including events on hidden controller lanes, click the **Selection Mode** field on the info line to activate the **Full Vertical** mode.

     NOTE

     You can also use the tool modifiers that are specified for the **Range Tool** in the **Preferences** dialog (**Editing** > **Tool Modifiers** page).

RESULT

The selection range is expanded.

RELATED LINKS

Editing - Tool Modifiers on page 1132
Selection Range Editing Specifics on page 216

Moving Selection Ranges

You can move selection ranges to a new position without moving their contents.

PREREQUISITE

- You have created a selection range.
- You have activated the **Nudge** section by right-clicking the corresponding toolbar and activating **Nudge**.

PROCEDURE

1. Set the nudge amount by doing one of the following:
   - Open the **Grid Type** pop-up menu, and select a value.
   - Open the **Nudge Settings** pop-up menu, and select a value.
2. Do one of the following:
   - In the **Nudge** section of the toolbar, click **Move Left**, or use the corresponding key command **Ctrl/Cmd** - **Left Arrow**.

- In the **Nudge** section of the toolbar, click **Move Right**, or use the corresponding key command **Ctrl/Cmd** - **Right Arrow**.

RESULT

The selection range is nudged according to your settings, but the contents of the selection are not moved.

RELATED LINKS

Setting up a Snap Grid for Nudge Operations on page 199
Selection Range Editing Specifics on page 216
Moving the Contents of Selection Ranges on page 220
Creating Selection Ranges on page 215
Duplicating Events on page 209

Moving the Contents of Selection Ranges

You can move the contents of selection ranges to a new position.

PREREQUISITE

You have created a selection range.

PROCEDURE

- Click the selection range, and drag it to a new position.

RESULT

The contents of the selection range are moved to the new position. If the range intersected with any events or parts, these are split before moving, so that only the sections within the selection range are affected.

RELATED LINKS

Moving Selection Ranges on page 219
Creating Selection Ranges on page 215
Duplicating Events on page 209

Duplicating the Contents of Selection Ranges

You can duplicate the contents of selection ranges.

PREREQUISITE

You have created a selection range.

PROCEDURE

- Do one of the following:
  - Click the selection range, hold down **Alt/Opt**, and drag.
  - Select **Edit** > **Functions** > **Duplicate**.
  - Right-click the selection range, and select **Duplicate**.

RESULT

The contents of the selection range are duplicated at the new position. If the range intersects with events or parts, these are split before moving, so that only the sections within the selection range are affected.

RELATED LINKS

Creating Selection Ranges on page 215
Selection Range Editing Specifics on page 216

Deleting the Contents of Selection Ranges

You can delete the contents of selection ranges.

PREREQUISITE

You have created a selection range.

PROCEDURE

- Do one of the following:
  - To delete the contents of a selection range and replace it with empty space, select **Edit** > **Delete**, or press **Backspace**.
  - To delete the contents of a selection range and move events that are situated at later timeline positions to the left, to close the gap, select **Edit** > **Range** > **Delete Time**.

RESULT

The content of the selection range is deleted.

RELATED LINKS

Selection Range Editing Specifics on page 216

Cutting the Contents of Selection Ranges

You can cut the contents of selection ranges.

PREREQUISITE

You have created a selection range.

PROCEDURE

- Do one of the following:
  - To cut the contents of a selection range and replace it with empty space, select **Edit** > **Cut**, or press **Ctrl/Cmd** - **X**.
  - To cut the contents of a selection range and move events that are situated at later timeline positions to the left, to close the gap, select **Edit** > **Range** > **Cut Time**.

RESULT

The cut data is saved to the clipboard.

RELATED LINKS

Selection Range Editing Specifics on page 216

Inserting Silence

You can insert silence at the start of a selection range and move events that are situated at later timeline positions to the right, to make room for the silence.

PROCEDURE

- Select **Edit** > **Range** > **Insert Silence**.

RESULT

Events to the right of the selection range start are moved farther to the right, to make room for the silence. The length of the silence corresponds to the length of the selection range.

RELATED LINKS

Selection Range Editing Specifics on page 216

Splitting Events at Selection Range Edges

You can split events or parts at the selection range edges, that is, at the start and at the end of a selection range.

PROCEDURE

1. On the **Project** window toolbar, activate the **Range Selection** tool.
2. Do one of the following:
   - Select **Edit** > **Range** > **Split**.
   - Right-click the selection range, and from the context menu select **Split**.
   - Press **Shift** - **X**.

RESULT

The events or parts are split at the edges of the selection range.

If you activated **Combine Selection Tools** mode on the **Project** window toolbar to split the split event, the event is automatically selected.

RELATED LINKS

Selection Range Editing Specifics on page 216
Combine Selection Tools Mode on page 196

Cropping Events to Selection Ranges

You can crop events to selection ranges, that is, remove the audio or MIDI outside the selection range from events or parts.

PREREQUISITE

You have created a selection range.

PROCEDURE

- Do one of the following:
  - Select **Edit** > **Range** > **Crop**.
  - Right-click the selection range, and from the context menu select **Crop**.

RESULT

The events are cropped to the selection range. Events that are entirely inside or outside the selection range are not affected.

RELATED LINKS

Selection Range Editing Specifics on page 216

Creating Audio Events from Selection Ranges

You can create a new audio event that exclusively contains a selection range in the **Sample Editor**.

PROCEDURE

1. On the **Sample Editor** toolbar, activate the **Range Selection** tool.
2. Select a range by clicking 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. Drag the selection range to an audio track in the **Project** window.

RELATED LINKS

Selection Range Editing Specifics on page 216

Creating Audio Clips from Selection Ranges

You can create a new audio clip that exclusively contains a selection range in the **Sample Editor**.

PROCEDURE

1. On the **Sample Editor** toolbar, activate the **Range Selection** tool.
2. Select a range by clicking 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. Select **Audio** > **Bounce Selection**.
4. Perform one of the following actions:
   - To replace the original, click **Replace**.
   - To keep the original, click **No**.

RESULT

A new **Sample Editor** window opens with the new clip. It refers to the same audio file as the original clip, but it only contains the audio corresponding to the selection range.

RELATED LINKS

Selection Range Editing Specifics on page 216

Playback and Transport

Cubase offers multiple methods and functions to control playback and transport.

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 in the **Set up Transport Panel** pane.

- To show all **Transport** panel sections, right-click anywhere on the **Transport** panel and select **Show All**.

The following sections are available:

Audio Performance Meter

Audio Performance Meter

The upper bar displays either the current realtime peak or the ASIO-Guard load, depending on which of the two has the higher value. The lower bar shows the hard disk transfer load of the disk engine.

For a more detailed display of realtime peak and ASIO-Guard load, click to open the **Audio Performance** panel.

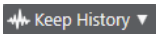
Common Record Modes

Common Record Modes

Allow you to determine what happens if you click **Record** during an audio or MIDI recording, and where to start the recording.

Audio Record Modes

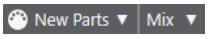
Audio Record Modes



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

MIDI Record Modes

MIDI Record Modes



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

MIDI Auto Quantize

Automatic MIDI Record Quantize

Activates automatic quantizing during a MIDI recording.

Locators

Go to Left Locator Position

Allows you to go to the left locator position.

Left Locator Position

Shows the left locator position.

Go to Right Locator Position

Allows you to go to the right locator position.

Right Locator Position

Shows the right locator position.

Locator Range Duration

Locators to Selection

Allows you to set the locators to the selection.

Locator Range Duration

Shows the duration of the locator range.

Punch Points

Lock Punch Points to Locators

Locks the punch points to the left and right locator positions.

Punch In

Activates **Punch In**.

Punch In Position

Allows you to set up the punch in position. For this to work, **Lock Punch Points to Locators** must be deactivated. To show/hide this, click the points on the divider.

Punch Out

Activates **Punch Out**.

Punch Out Position

Allows you to set up the punch out position. For this to work, **Lock Punch Points to Locators** must be deactivated. To show/hide this, click the points on the divider.

Transport Controls

Go to Previous Marker/Zero

Moves the project cursor to the previous marker/zero position on the timeline.

Go to Next Marker/Project End

Moves the project cursor to the next marker/project end.

Rewind

Moves backward.

Forward

Moves forward.

Cycle

Activates/Deactivates cycle mode.

Stop

Stops playback.

Start

Starts playback.

Transport Record

Activates/Deactivates record mode.

Time Display

Select Primary Time Format

Allows you to select a time format for the primary time display.

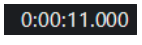
Primary Time Display

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

Select Secondary Time Format

Allows you to select a time format for the secondary time display.

Secondary Time Display



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

Markers

Jump to Marker

Allows you to set and locate marker positions.

Open Markers Window

Opens the **Markers** window.

Pre-roll & Post-roll

Activate Pre-roll

Activates pre-roll.

Pre-roll Amount

Allows you to set the pre-roll position. To show/hide this, click the points on the divider.

Activate Post-roll

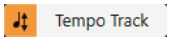
Activates post-roll.

Post-roll Amount

Allows you to set the post-roll position. To show/hide this, click the points on the divider.

Tempo & Time Signature

Activate Tempo Track



Allows you to activate/deactivate the tempo track.

Tempo

Allows you to set the tempo value.

Time Signature

Allows you to set the first time signature value. To show/hide this, click the points on the divider.

Tap Tempo

Allows you to insert tempo changes into your project by tapping.

Tap Tempo Mode

Defines where new tempo events are inserted.

Activate External Sync

Activate External Sync

Activates external synchronization.

Open Synchronization Setup

Allows you to open the **Project Synchronization Setup** dialog.

Click & Count-in & Click Pattern

Activate Metronome Click

Activates the metronome click.

Activate Count-in

Activates the metronome click in count-in.

Click Pattern

Allows you to set up a click pattern. To show/hide this, click the points on the divider.

Open Metronome Setup

Opens the **Metronome Setup** dialog. To show/hide this, click the points on the divider.

Input/Output Activity

MIDI In Activity

Displays the MIDI input signals.

MIDI Out Activity

Displays the MIDI output signals.

Audio Activity

Displays the audio input/output signals.

Audio Clipping

Displays audio clipping.

Level Display

Displays the output level.

Level Control

Allows you to control the output level.

RELATED LINKS
Transport on page 1147
Transport - Scrub on page 1148
Tap Tempo Modes on page 1032

Transport Menu

The **Transport** menu contains several transport functions as well as many other options related to playback and recording.

Transport Panel

Opens the **Transport** panel.

Transport Commands

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.

Start Mode

Start from Project Cursor Position

If activated, playback starts from the current project cursor position.

Start from Cycle Start

If activated, playback starts from the left locator.

Start from Selection

If activated, playback starts from the start of the current selection.

Start from Selection or Cycle Start

If activated, playback starts from the start of the current selection. If nothing is selected, playback starts from the left locator.

Return to Start Position on Stop

If activated, the project cursor returns to its start position when playback is stopped.

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.

Enter Locator Range Duration

Allows you to enter the duration of the locator range 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

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.

Lock Punch Points to Locators

Allows you to unlock/lock the punch in and punch out position to the left and the right locator.

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

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 with the new recording. In cycle mode, all takes from the current cycle recording are kept.

Replace

Replaces existing events or portions of events with 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 with the new recording.

Auto Quantize in Record

Activates automatic quantizing during recording.

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 recording.

MIDI Retrospective Recording

Allows you to recover MIDI data that you play in **Stop** mode or during playback. The following options are available:

Insert from All MIDI Inputs
Inserts MIDI data that was sent to all track inputs as a linear MIDI part on the selected track.

Insert from Track Input as Linear Recording
Inserts MIDI data that was sent to the track input as a linear MIDI part on the selected track.

Insert from Track Input as Cycle Recording
Inserts MIDI data that was sent to the track input as stacked MIDI parts on the selected track.

Empty All Buffers
Empties the retrospective record buffer for the selected track.

Metronome Setup

Opens the **Metronome Setup** dialog.

Activate Metronome

Activates/Deactivates the metronome click.

Project Synchronization Setup

Opens the **Project Synchronization Setup** dialog.

Activate External Sync

Sets Cubase to be synchronized externally.

RELATED LINKS
Left and Right Locators on page 242
Punch In and Punch Out on page 248
Pre-Roll and Post-Roll on page 247
Common Record Modes Menu on page 267
Audio Record Modes on page 272
MIDI Record Modes on page 279
Recovery of MIDI Recordings on page 280
Metronome Click on page 248

Transport Bar

The **Transport Bar** contains all transport functions in an integrated and fixed zone of the **Project** window.

- To activate the **Transport Bar**, click **Set up Window Layout** on the **Project** window toolbar and activate **Transport Bar**.
- To display all transport elements, right-click in an empty area of the **Transport Bar** and click **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 Bar on page 52
Project Window Toolbar on page 38

Transport Bar Sections

The **Transport Bar** panel has different sections that you can show or hide by activating the corresponding options in the **Set up Transport Bar** pane.

- To activate the **Transport Bar**, click **Set up Window Layout** on the **Project** window toolbar and activate **Transport Bar**.
- To show/hide tools, right-click an empty area of the **Transport Bar**, and activate the tools that you want to display. To show all tools, click **Show All**.

Constrain Delay Compensation

Constrain Delay Compensation

Minimizes the latency effects of the delay compensation.

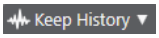
Common Record Modes

Common Record Modes

Allow you to determine what happens if you click **Record** during an audio or MIDI recording, and where to start the recording.

Audio Record Modes

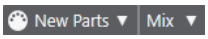
Audio Record Modes



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

MIDI Record Modes

MIDI Record Modes



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

MIDI Auto Quantize

Automatic MIDI Record Quantize

Activates automatic quantizing during a MIDI recording.

Left Divider

Left Divider

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

Audio Performance Meter

Audio Performance Meter

The upper bar displays either the current realtime peak or the ASIO-Guard load, depending on which of the two has the higher value. The lower bar shows the hard disk transfer load of the disk engine.

For a more detailed display of realtime peak and ASIO-Guard load, click to open the **Audio Performance** panel.

Locators

Go to Left Locator Position

Allows you to go to the left locator position.

Left Locator Position

1. 5. 1. 0

Shows the left locator position.

Go to Right Locator Position

Allows you to go to the right locator position.

Right Locator Position

4. 8. 1. 0

Shows the right locator position.

Locator Range Duration

Locators to Selection

Allows you to set the locators to the selection.

Locator Range Duration

4. 8. 1. 0

Shows the duration of the locator range.

Punch Points

Punch In

Activates **Punch In**.

Punch Out

Activates **Punch Out**.

Lock Punch Points to Locators

Locks the punch points to the left and right locator positions.

Punch In Position

Allows you to set up the punch in position. For this to work, **Lock Punch Points to Locators** must be deactivated. To show/hide this, click the points on the divider.

Punch Out Position

Allows you to set up the punch out position. For this to work, **Lock Punch Points to Locators** must be deactivated. To show/hide this, click the points on the divider.

Transport Controls

Go to Previous Marker/Zero

Moves the project cursor to the previous marker/zero position on the timeline.

Go to Next Marker/Project End

Moves the project cursor to the next marker/project end.

Rewind

Moves backward.

Forward

Moves forward.

Cycle

Activates/Deactivates cycle mode.

Stop

Stops playback.

Start

Starts playback.

Transport Record

Activates/Deactivates record mode.

Retrospective Record

Insert Retrospective Recording from All MIDI Inputs on Selected Track

Allows you to recover MIDI notes that you played in stop mode or during playback.

Time Displays

Select Primary Time Format

Allows you to select a time format for the primary time display.

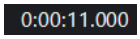
Primary Time Display

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

Select Secondary Time Format

Allows you to select a time format for the secondary time display.

Secondary Time Display



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

Markers

Jump to Marker

Allows you to set and locate marker positions.

Open Markers Window

Opens the **Markers** window.

Pre-roll & Post-roll

Activate Pre-roll

Activates pre-roll.

Pre-roll Amount

Allows you to set the pre-roll position. To show/hide this, click the points on the divider.

Activate Post-roll

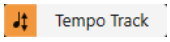
Activates post-roll.

Post-roll Amount

Allows you to set the post-roll position. To show/hide this, click the points on the divider.

Tempo & Time Signature

Activate Tempo Track



Allows you to activate/deactivate the tempo track.

Tempo

Allows you to set the tempo value.

Time Signature

Allows you to set the first time signature value. To show/hide this, click the points on the divider.

Tap Tempo

Allows you to insert tempo changes into your project by tapping.

Tap Tempo Mode

Defines where new tempo events are inserted.

Right Divider

Right Divider

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

Activate External Sync

Activate External Sync

Activates external synchronization.

Open Synchronization Setup

Allows you to open the **Project Synchronization Setup** dialog.

Click & Count-in & Click Pattern

Activate Metronome Click

Activates the metronome click.

Activate Count-in

Activates the metronome click in count-in.

Click Pattern

Allows you to set up a click pattern. To show/hide this, click the points on the divider.

Open Metronome Setup

Opens the **Metronome Setup** dialog. To show/hide this, click the points on the divider.

Input/Output Activity

MIDI In Activity

Displays the MIDI input signals.

MIDI Out Activity

Displays the MIDI output signals.

Audio Activity

Displays the audio input/output signals.

Audio Clipping

Displays audio clipping.

Level Display

Displays the output level.

Level Control

Allows you to control the output level.

Transport Pop-Up Window

The **Transport** pop-up window allows you to access specific transport commands if the **Transport** panel, the **Transport Bar**, and the **Transport Controls** in the **Project** window toolbar are closed or hidden.

The following default key commands open the **Transport Bar** pop-up window:

Enter Left Locator

Shift - **L**

Enter Right Locator

Shift - **R**

Enter Project Cursor Position

Shift - **P**

Enter Tempo

Shift - **T**

Enter Time Signature

Shift - **C**

Enter Punch In Position

Shift - **I**

Enter Punch Out Position

Shift - **O**

Go to Left Locator

Num 1

Go to Right Locator

Num 2

A specific key command opens the corresponding section of the **Transport** pop-up window:

Transport pop-up window for entering the left **Locator** position.

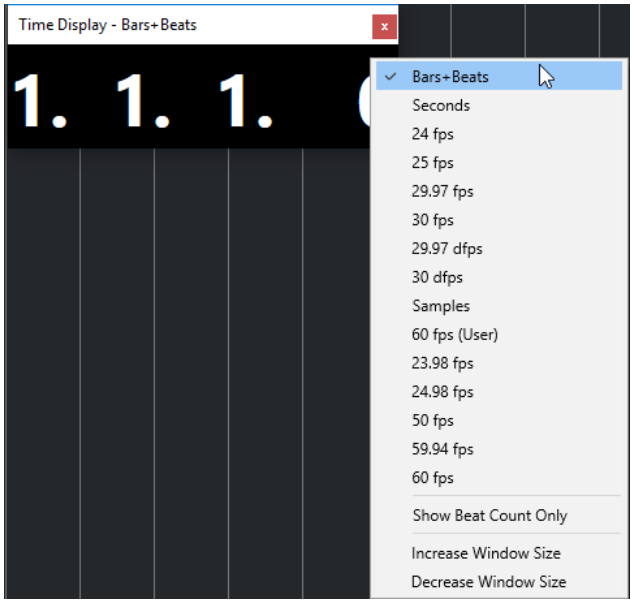
NOTE

To close the **Transport** pop-up window, press **Esc**.

Time Display Window

The **Time Display** window allows you to view the current time position in a separate window. You can adjust its size and specify the time format that you want to display.

- To open the **Time Display** window, select **Studio** > **More Options** > **Time Display**.



Right-click the window to access the following options:

Bars+Beats
Displays the time in bars and beats.

Seconds
Displays the time in seconds.

Fps
Displays the time in frames per second.

Samples
Displays the time in samples.

Show Beat Count Only
Shows the beat counts only. This is useful if you want to use the **Time Display** window as a visual metronome.

Increase Window Size
Increases the size of the window and the displayed values.

Decrease Window Size
Decreases the size of the window and the displayed values.

NOTE

You can set up the **Window Transparency** in the **Studio Setup** dialog (**Time Display** page).

RELATED LINKS
Time Signature Events on page 1034

Left and Right Locators

The left and right locators are a pair of markers that you can use as reference positions in the **Project** window and in the editors.

Locators help you, for example, to do the following:

- Positioning the project cursor.
- Defining start and stop positions for recording.
- Defining start positions for importing or exporting events.
- Setting up a cycle range.
- Selecting, copying, creating or splitting events.

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 in the event display.

NOTE

In the event display of the MIDI editors, the locator range is only highlighted if **Show Part Borders** is deactivated.

- To activate/deactivate cycle mode, click the locator range in the upper part of the ruler or activate **Activate Cycle** in the transport controls.

- 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
Project Window Toolbar on page 38
Setting the Project Cursor on page 244
Activating Recording Manually on page 264
Activating Recording Automatically on page 264
Cycle Recording on page 266
Punch In and Punch Out on page 248

Common Record Modes Menu on page 267
Import Options for MIDI Files on page 292
Export Options Dialog for MIDI Files on page 158
Export Audio Mixdown on page 1044
Setting the Locators Using Cycle Markers on page 344
Select Submenu on page 196
Audio Parts on page 193
MIDI Parts on page 193
Signature Track Controls on page 125
Fill Loop on page 210
Splitting Events on page 206
Transport on page 1147

Setting the Left Locator

Setting the left locator can be useful if you want to add a reference position in the **Project** window and in the editors.

PROCEDURE

- Do one of the following:
  - Press **Ctrl/Cmd**, and click in the upper part of the ruler to set the left locator to that position.
  - Adjust the **Left Locator Position** value.

    This is available in the **Locators** section of the **Project** window toolbar, the editor toolbars, the **Transport** panel, and the **Transport Bar**.
  - Drag the left locator handle in the upper part of the ruler.
  - Press **Ctrl/Cmd**, and, on the numeric keypad, press **1** to set the left locator to the project cursor position.
  - Press **Alt/Opt**, and click **Go to Left Locator Position** on the **Transport** panel.

Setting the Right Locator

Setting the right locator can be useful if you want to add a reference position in the **Project** window and in the editors.

PROCEDURE

- Do one of the following:
  - Press **Alt/Opt**, and click in the upper part of the ruler to set the right locator to that position.
  - Adjust the **Right Locator Position** value.

    This is available in the **Locators** section of the **Project** window toolbar, the editor toolbars, the **Transport** panel, and the **Transport Bar**.
  - Drag the right locator handle in the upper part of the ruler.
  - Press **Ctrl/Cmd**, and, on the numeric keypad, press **2** to set the right locator to the project cursor position.
  - Press **Alt/Opt**, and click **Go to Right Locator Position** on the **Transport** panel.

Setting up Locator Ranges

You can set up the locator range, that is, the area between the left and the right locator.

PROCEDURE

- Do one of the following:
  - Click and drag in the upper part of the ruler.
  - Select a range or an event, and press **P** to set the locators to the selection.
  - Double-click a cycle marker.
  - Press **Ctrl/Cmd** - **Alt/Opt**, and click at a position in the upper part of the ruler to set both locators to the nearest snap position.

RESULT

The locator range is set up and highlighted in the ruler and in the event display. **Snap** is taken into account.

Moving Locator Ranges

In the ruler, you can move the locator range.

PREREQUISITE

You have set up a locator range.

PROCEDURE

1. Move the mouse pointer to the upper part of the ruler inside a locator range.
   A hand symbol is shown.
2. Click and drag to the left or to the right to move the locator range.

Setting the Project Cursor

You can set the project cursor by clicking at a position, or you can predefine a position.

PROCEDURE

- Do one of the following:
  - Hold down **Shift** - **Alt/Opt**, and click in the **Project** window event display.
  - Click **Go to Previous Marker/Zero** or **Go to Next Marker/Project End**.
    These are available in the **Transport Controls** section of the **Project** window toolbar, the editor toolbars, the **Transport** panel, and the **Transport Bar**.
  - Click in the lower part of the ruler.
  - Select **Transport** > **Set Project Cursor Position**, and select an entry in the submenu.
  - Use a key command.

    NOTE

    You can assign key commands for setting the project cursor location in the **Transport** category of the **Key Commands** dialog. In addition to the default key commands, you

can set up further commands, for example, for moving the project cursor forward or backward in fixed intervals.

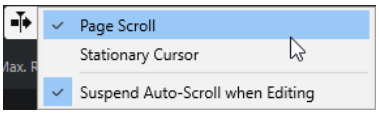
RELATED LINKS
Transport Panel Sections on page 224
Ruler on page 48
Transport Menu on page 229
Transport on page 1147
Transport Bar on page 234
Left and Right Locators on page 242
Key Commands on page 1094

Auto-Scroll Settings Menu

Auto-Scroll allows you to keep the project cursor visible in the window during playback.

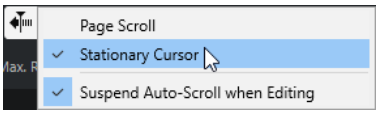
If you activate **Auto-Scroll** on the toolbar of the **Project** window or in one of the editors, the following modes are available in the **Select Auto-Scroll Settings** pop-up menu:

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
Project Window Toolbar on page 38

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 available as an option in the **Select Auto-Scroll Settings** pop-up menu 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 until you click **Auto-Scroll** again.

As a visual feedback, the **Auto-Scroll** button changes its color.

Time Formats

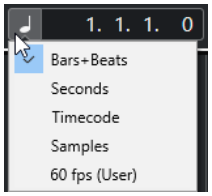
You can set up different time formats.

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 for 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.



RESULT

The time format on the **Transport** panel and all rulers and position displays are updated.

NOTE

You can also select **Project** > **Project Setup**. In the **Project Time Displays** section, open the **Display Format** pop-up menu to select the primary time format.

RELATED LINKS

Project Setup Dialog on page 100

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 48
Ruler Track on page 120

Pre-Roll and Post-Roll

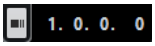
You can activate pre-roll and post-roll with the corresponding buttons in the **Pre-roll & Post-roll** section on the **Transport** panel or by selecting **Transport** > **Pre-roll & Post-roll** > **Use Pre-roll/Use Post-roll**.

NOTE

To show the **Pre-roll & Post-roll** section, right-click anywhere in the **Transport** panel or in the **Transport Bar** and activate **Pre-roll & 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 if **Stop after Automatic Punch Out** is activated in the **Preferences** dialog (**Record** page).

Using Pre-Roll and Post-Roll

You can set up a pre-roll and a post-roll value for recording.

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 or in the **Transport Bar**, activate **Punch In** and **Punch Out**.
3. In the **Preferences** dialog, select **Record**.
4. Activate **Stop after Automatic Punch Out**.
5. Right-click anywhere on the **Transport** panel or in the **Transport Bar** and activate **Pre-roll & Post-roll**.
6. In the **Pre-roll & Post-roll** section, activate **Pre-roll** and **Post-roll**.
7. In the **Pre-roll Amount** and **Post-roll Amount** fields, enter the pre-roll and post-roll values.
8. Activate **Record**.

RESULT

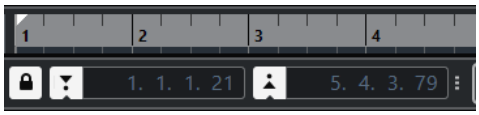
The project cursor rolls back by the specified pre-roll value, and playback starts. When the cursor reaches the left locator, recording is automatically activated. When the cursor reaches the right locator, recording is deactivated, but playback continues for the specified post-roll value before stopping.

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 of recordings. The punch in position determines the record start position and 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.

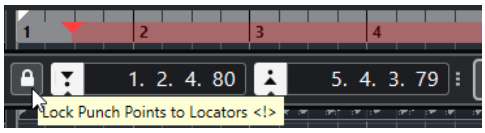
The punch in position is locked to the left locator position and the punch out position to the right locator position. The punch position fields are unavailable.



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, regardless of 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 264
Stopping Recording Automatically with Punch Out on page 265

Metronome Click

You can use the metronome click as a timing reference for playing along and recording. The two parameters that govern the timing of the metronome are project tempo and the time signature.

- To activate the metronome click, activate **Activate Metronome Click** on the **Transport** panel.

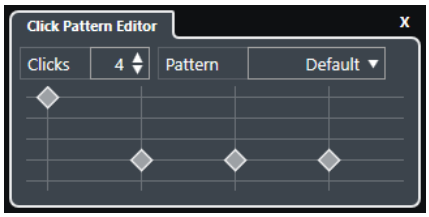
  You can also select **Transport** > **Activate Metronome** or use the corresponding key command.
- To define if the metronome click is played during playback, recording or count-in, select **Transport** > **Metronome Setup**, and make your changes on the **General** tab.
- To set up the sounds for the metronome click, select **Transport** > **Metronome Setup**, and make your changes on the **Click Sounds** tab.

RELATED LINKS
Transport Panel Sections on page 224
Project Tempo Modes on page 1023

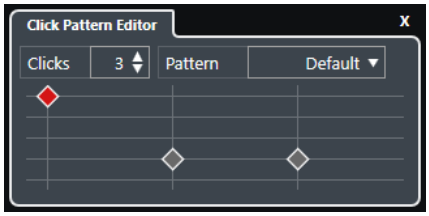
Click Patterns

Click patterns allow you to set up a custom metronome click.

By default, the metronome click in Cubase has a 4/4 pattern with a fixed number of 4 clicks. The click level of the first click is high, while the level of the other beats is low.



The default metronome click pattern with 4 clicks at a 4/4 time signature



A metronome click pattern with 3 clicks at a 3/4 time signature

By setting up click patterns for the metronome at the current time signature, you can create a custom metronome click. You can determine the number of clicks and the level of the clicks to your liking.

If you have different project parts with different time signatures or tempos and you want to set up different click patterns to match the rhythm and feel of these parts, you can set up a metronome click pattern for each signature event in your project.

You can also add the same time signature for different sections and set up different patterns for them.

NOTE

- If you want to visualize the current click pattern in the **Project** window, **Key Editor** or **Drum Editor** event display, activate **Use Metronome Click Pattern Level for Grid Line Emphasis** in the corresponding ruler context menu. This is useful if **Snap** is activated and the **Snap Type** is set to **Grid**.
- Grid lines are only emphasized if they are shown. If you want to visualize a click pattern that is set to 6 **Clicks** and a 4/4 **Time Signature**, you must set the **Grid Type** to a triplet value.

The **Click Patterns** tab in the **Metronome Setup** dialog allows you to manage factory and user click patterns. You can remove and rename them, create new click patterns, and change the default click pattern for a specific time signature.

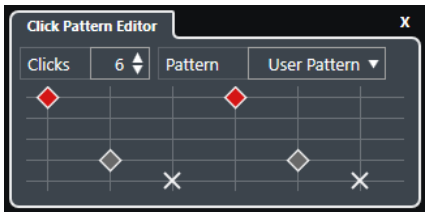
RELATED LINKS
Click Patterns Tab on page 257
Click Pattern Editor on page 250
Setting up a Metronome Click Pattern on page 250
Setting up Metronome Click Patterns for Signature Events on page 251
Project Window Toolbar on page 38

Click Pattern Editor

The **Click Pattern Editor** allows you to set up a click pattern for your project to create new grooves and feels for the metronome click. This is useful if you want to create a triplet pattern for a 4/4 signature, for example.

The **Click Pattern Editor** is available in the **Transport Bar**. If you add a signature track, it is available in the **Inspector** and on the info line.

- To open the **Click Pattern Editor** in the **Transport Bar**, click the points to the right of the **Click & Count-in & Click Pattern** section, and drag all the way to the right. Click the pattern field to open the **Click Pattern Editor**.



Clicks

Allows you to define the number of clicks that are used in the pattern.

Pattern

Allows you to select a factory pattern or to save your own user patterns. Which patterns are available in this menu depends on the current time signature and on the settings in the **Metronome Setup** dialog on the **Click Patterns** tab.

NOTE

To view, edit and rename the pattern presets, open the **Click Patterns** tab in the **Metronome Setup** dialog.

Event display

Shows the defined number of beats for the selected pattern.

You can change the accent level for a beat by changing its vertical position in the event display. There are 4 different settings. These correspond to the settings in the **Metronome Setup** dialog on the **Click Sounds** tab. You can mute a beat by clicking the lowest vertical position.

RELATED LINKS
Transport Bar Sections on page 235
Signature Track on page 125

Setting up a Metronome Click Pattern

You can set up a different metronome click pattern for your project.

PROCEDURE

1. In the **Transport Bar**, click the points to the right of the **Click & Count-in & Click Pattern** section, and drag all the way to the right to show the click pattern section.
2. Click the pattern field to open the **Click Pattern Editor**.
3. Do one of the following:
   - Select one of the patterns that are available for the current time signature in the **Pattern** pop-up menu.

- Set up a new user pattern by changing the number of clicks in the **Clicks** value field. You can also change the accent level for a beat by changing its vertical position in the event display.

4. When you are done, click outside the **Click Pattern Editor** to close it.
5. Activate the metronome click.

RESULT

The metronome click is played back with the defined click pattern.

RELATED LINKS

Click Pattern Editor on page 250
Transport Bar Sections on page 235
Click Patterns Tab on page 257
Saving User Patterns on page 251

Setting up Metronome Click Patterns for Signature Events

You can set up a metronome click pattern for each signature event in your project. This is useful if you have different project parts with different time signatures and you want to customize click patterns to the rhythm and feel of these parts. You can also add the same time signature for different sections and set up different patterns for them.

PROCEDURE

1. Double-click the plus sign to open the **Click Pattern Editor**.
2. Do one of the following:
   - Select one of the patterns that are available for the current time signature in the **Pattern** pop-up menu.
   - Set up a new user pattern by changing the number of clicks in the **Clicks** value field. You can also change the accent level for a beat by changing its vertical position in the event display.
3. When you are done, click outside the **Click Pattern Editor** to close it.
4. Repeat this for each signature event for which you want to set up a click pattern.

RESULT

If you play back the project and activate the metronome click, the different project parts use the defined click patterns. The **Click Pattern Editor** in the **Transport Bar** shows the pattern at the project cursor position.

RELATED LINKS

Click Pattern Editor on page 250
Signature Track on page 125
Time Signature Events on page 1034

Saving User Patterns

You can set up and save your own user pattern for the metronome click. This is useful if you want to use your click pattern in other projects as well.

PREREQUISITE

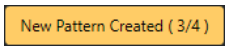
The time signature for which you want to set up a user pattern is selected in the **Tempo & Time Signature** section of the **Transport Bar**.

PROCEDURE

1. In the **Transport Bar**, click the points to the right of the **Click & Count-in & Click Pattern** section, and drag all the way to the right to show the click pattern section.
2. Click the pattern field to open the **Click Pattern Editor**.
3. Use the **Clicks** setting to define the number of clicks that you want to hear.
4. Change the accent level for a beat by changing its vertical position in the event display.

   As soon as you make changes to the default pattern, the pattern name in the **Pattern** field changes to **User Pattern**.
5. When you are done, click in the **Pattern** field, and select **Store Pattern** from the pop-up menu.

   The pattern name changes to **Untitled**, and a message informs you that a new pattern is created for the selected time signature.

RESULT

Your user pattern is saved.

AFTER COMPLETING THIS TASK

Rename the untitled user pattern in the **Metronome Setup** dialog (**Click Patterns** tab).

RELATED LINKS

Click Patterns Tab on page 257
Renaming Click Patterns on page 252

Renaming Click Patterns

By default, newly created user patterns are called **Untitled**, but you can rename them in the **Metronome Setup** dialog.

PROCEDURE

1. Select **Transport** > **Metronome Setup**.
2. Click **Click Patterns** to open the **Click Patterns** tab.
3. Navigate to the time signature for which you have added a new, untitled user pattern, and double-click its name.
4. Enter a name for the click pattern, and press **Enter** to confirm.

RELATED LINKS

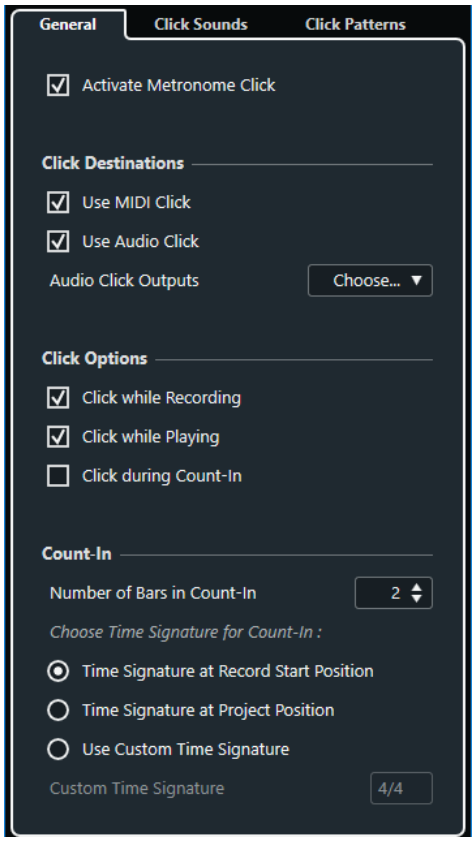
Click Patterns Tab on page 257

Metronome Setup Dialog

The **Metronome Setup** dialog allows you to make settings for the metronome.

To open the **Metronome Setup** dialog, do one of the following:

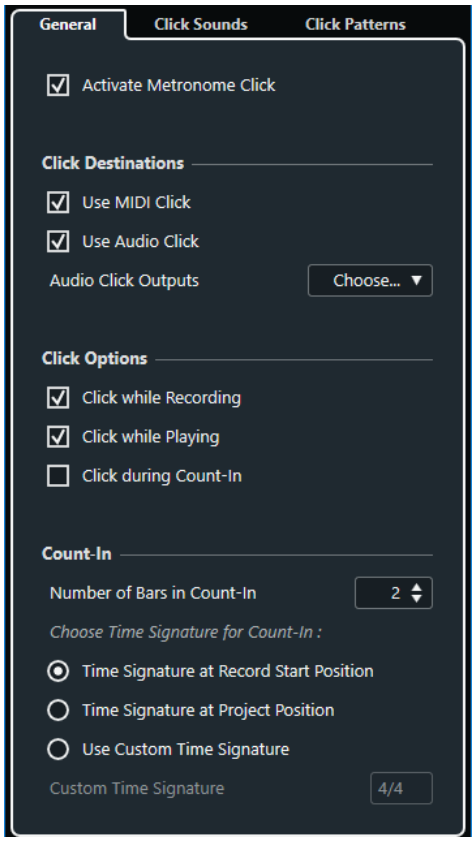
- Select **Transport** > **Metronome Setup**.
- In the **Transport Bar**, open the **Click & Count-in & Click Pattern** section, and click **Open Metronome Setup**.



RELATED LINKS
General Tab on page 254
Click Sounds Tab on page 255
Click Patterns Tab on page 257
Transport Bar Sections on page 235

General Tab

The **General** tab allows you to make basic metronome settings.



In the topmost section, the following options are available:

Activate Metronome Click

Activates/Deactivates the metronome click.

In the **Click Destinations** section, the following options are available:

Use MIDI Click

Activates a MIDI click for the metronome.

Use Audio Click

Activates an audio click for the metronome that is output via the audio hardware.

Audio Click Outputs

If you use multiple output busses, this allows you to activate the output bus where you want to route the metronome click.

In the **Click Options** section, the following options are available:

Click while Recording

Activates the metronome click during recording.

Click while Playing

Activates the metronome click during playback.

Click during Count-In

Activates a musical count-in that is played when you start recording from stop mode.

In the **Count-In** section, the following options are available:

- **Number of Bars in Count-In**

  Allows you to set the number of bars that the metronome counts in before recording starts.
- **Time Signature at Record Start Position**

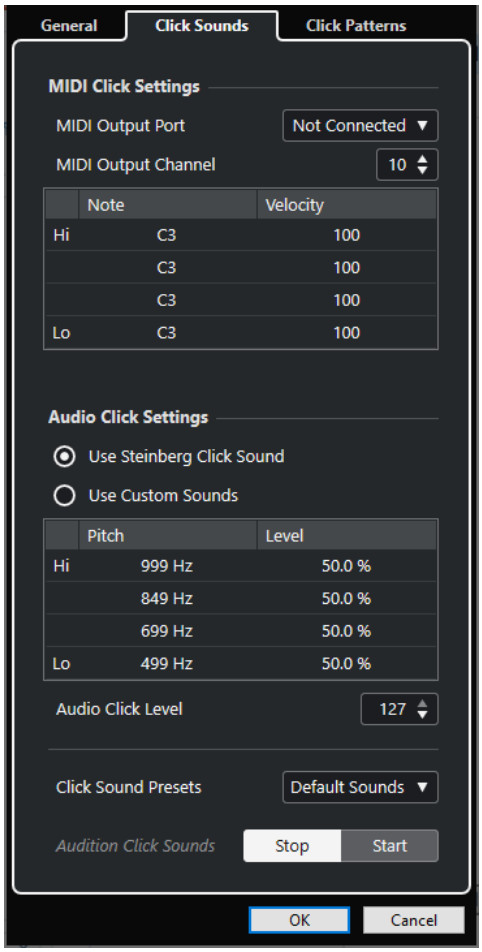
  Activate this to let the count-in automatically use the time signature and tempo set at the position where recording starts.
- **Time Signature at Project Position**

  Activate this to let the count-in use the time signature at the project position.
- **Use Custom Time Signature**

  Allows you to set a time signature for the count-in. In this mode, signature changes in the project do not affect the count-in.

Click Sounds Tab

The **Click Sounds** tab allows you to set up and audition the MIDI click and the audio click. You can use the default audio or MIDI click, choose from a list of factory preset sounds, or assign your own custom sounds.



The **MIDI Click Settings** section allows you to set up the MIDI click that sounds if you activate **Use MIDI Click** in the **Click Destinations** section on the **General** tab.

MIDI Output Port

Allows you to select a MIDI output port for the MIDI click. You can also select a VST instrument previously set up in the **VST Instruments** window.

MIDI Output Channel

Allows you to select a MIDI output channel for the MIDI click.

Note

Allows you to set the MIDI note number, that is, the pitch from C-2 to G8. Set the note number for the first beat in a bar in the top row, and the note numbers for the other beats in the rows below.

Velocity

Allows you to set the velocity of the MIDI click sound. Set the velocity for the first beat in a bar in the top row and the velocities for the other beats in the rows below.

The **Audio Click Settings** section allows you to set up the audio click that sounds if you activate **Use Audio Click** in the **Click Destinations** section on the **General** tab.

Use Steinberg Click Sound

Activates the default sounds for the metronome click.

Pitch

Allows you to set the pitch for the default sounds. Set the pitch for the first beat in a bar in the top row and the pitches for the other beats in the rows below.

Level

Allows you to set the level for the default sounds. Set the level for the first beat in a bar in the top row and the levels for the other beats in the rows below.

Use Custom Sounds

Activates custom sounds for the metronome click. For this to work, you must select an audio file for the custom sounds by clicking in the **Sound** column.

Sound

Allows you to select an audio file for the custom sounds. Select an audio file for the first beat in a bar in the top row and the audio files for the other beats in the rows below.

Level

Allows you to set the level for the custom sounds. Set the level for the first beat in a bar in the top row and the levels for the other beats in the rows below.

Audio Click Level

Allows you to adjust the level of the audio click.

Click Sound Presets

Allows you to load one of the click sound presets that supports up to 4 accents. Amongst other click sounds that are suited for a broad range of applications, you can also select **Steinberg Click Sound**, the default click sound of Cubase.

You can also create your own presets and save them.

Audition Click Sounds

Click **Start** to audition the activated click sounds.

Setting up a Custom Audio Click Sound

If you do not want to use the default click sound, you can set up your own custom sound.

PREREQUISITE

In the **Metronome Setup** dialog on the **General** tab, **Activate Metronome Click** is activated. In the **Click Destinations** section, **Use Audio Click** is activated.

PROCEDURE

1. Open the **Click Sounds** tab, and in the **Audio Click Settings** section, activate **Use Custom Sounds**.
2. In the **Sound** column, click the top row.
3. In the file dialog, navigate to the audio file that you want to use as a custom sound for the first beat and select it.
4. Click **Open**.
5. Click the other rows to select audio files for the other beats.
6. Set the level of the sounds by clicking the respective rows in the **Level** column and adjusting the value.
7. Optional: Click **Start** to audition the custom sounds.

RESULT

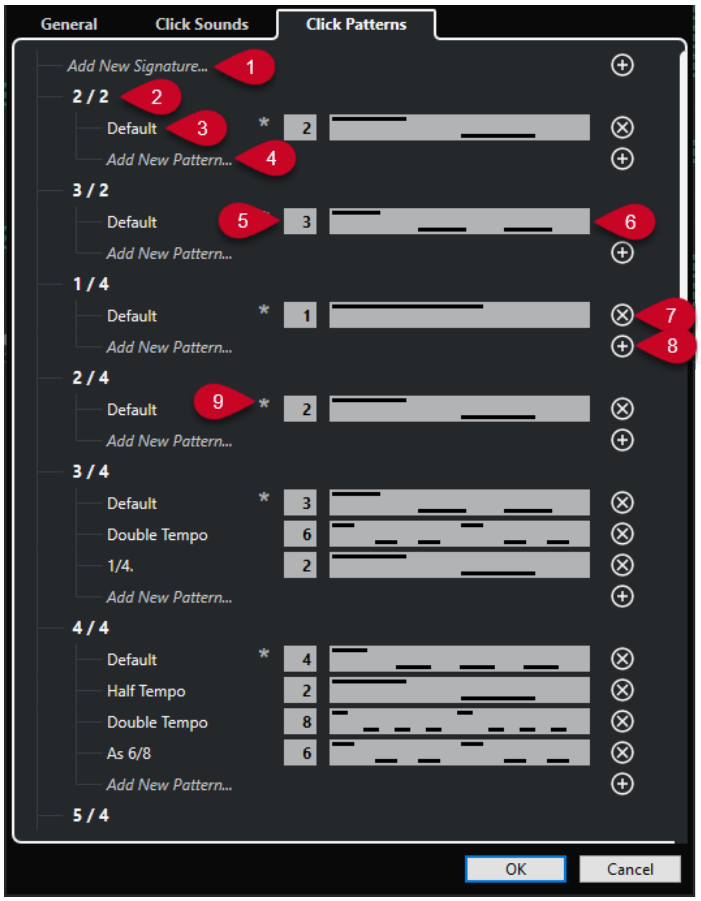
The metronome uses the defined custom sounds for the audio click.

AFTER COMPLETING THIS TASK

Open the **Click Sound Presets** pop-up menu, and save your custom sounds as a preset.

Click Patterns Tab

The **Click Patterns** tab allows you to manage click patterns. Click patterns allow you to edit the default metronome click.



The following options are available:

1 **Add New Signature**

Click and enter a time signature value to add a new time signature.

2 **Available Time Signatures**

Shows the available time signatures.

3 **Available Patterns**

Shows the available click patterns.

4 **Add New Pattern**

Double-click to add a new click pattern for the time signature.

5 **Clicks**

Allows you to change the number of clicks used in the click pattern.

6 **Click Pattern**

Shows the click pattern. You can open the **Click Pattern Editor** by clicking the pattern.

7 **Remove Click Pattern**

Removes the click pattern from the list of available patterns.

8 **Add New Pattern**

Adds a new default click pattern for the time signature.

9 **Default Pattern for Time Signature**

Cubase comes with several factory click patterns for every time signature. And for every time signature, one click pattern is defined as default click pattern that is used for every new project in that specific time signature.

NOTE

You can set another click pattern as the default pattern for a time signature by clicking to the left of the number field of this pattern. An asterisk indicates that this pattern is the new default pattern.

NOTE

If you scroll all the way down, you can reset all click patterns to the factory settings by clicking **Reset to Factory Patterns**.

You can double-click the name of a pattern to rename it.

RELATED LINKS
Saving User Patterns on page 251
Renaming Click Patterns on page 252

Creating a Click Track

You can create an audio or a MIDI track that contains the click.

PROCEDURE

- Do one of the following:
  - Select **Project** > **Signature Track** > **Render Audio Click between Locators**.
  - Select **Project** > **Signature Track** > **Render MIDI Click between Locators**.

RESULT

- An audio track containing an audio event with the click is added to your project. The level corresponds to the **Audio Click Level** setting on the **Click Sounds** tab of the **Metronome Setup** dialog.
- A MIDI track containing a MIDI part with the click is added to your project. The output of the MIDI track is routed to the **MIDI Output Port** that you set up on the **Click Sounds** tab of the **Metronome Setup** dialog.

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

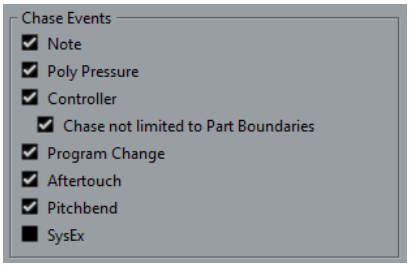
You have a MIDI track with a program change event inserted at the beginning. This event makes a synth switch to a piano sound.

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 should really 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 can apply to other event types as well. In the **Preferences** dialog (**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 1140

On-Screen Keyboard

The **On-Screen 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 **On-Screen Keyboard** is displayed, the usual key commands are blocked because they are reserved for the **On-Screen 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 On-Screen Keyboard: **Alt/Opt** - **K**

Recording MIDI With the On-Screen Keyboard

You can use the **On-Screen Keyboard** to record MIDI in Cubase.

PREREQUISITE

You have selected a MIDI or instrument track and activated **Record Enable**.

PROCEDURE

1. Select **Studio** > **On-Screen Keyboard**.
2. On the **Transport** panel, activate **Record**.
3. Perform one of the following actions to enter notes:
   - Click on the keys of the **On-Screen 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.

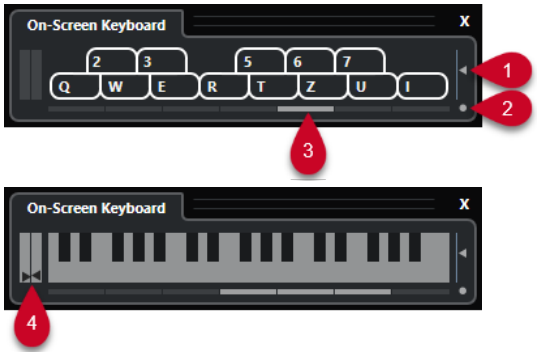
AFTER COMPLETING THIS TASK

Close the **On-Screen Keyboard** to make all key commands available again.

On-Screen Keyboard Options

The **On-Screen Keyboard** offers different display modes as well as other options.

- To open the **On-Screen Keyboard**, select **Studio** > **On-Screen Keyboard**.



1 Note Velocity Level

This slider allows you to adjust the volume of the **On-Screen Keyboard**.

2 Change On-Screen Keyboard Type

This button allows you to switch between computer keyboard and piano keyboard display mode.

In computer keyboard mode, you can use the two rows of keys that are displayed on the **On-Screen Keyboard** to enter notes.

The piano keyboard has a wider range of keys. It allows you to enter more than one voice simultaneously.

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.

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 parameters in the **Project Setup** dialog according to your specifications.

  The parameters in the **Project Setup** dialog determine the record file format, sample rate, project duration, 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 15
Setting up MIDI on page 24
Setting up a Metronome Click Pattern on page 250

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.

PROCEDURE

- Do one of the following:
  - Activate **Record Enable** in the track list.
  - Activate **Record Enable** in the **MixConsole**.
  - Select the track that you want to record-enable, and activate **Record Enable** in the **Inspector**.

RESULT

The tracks are record-enabled.

NOTE

If you set up a key command for **Activate Record Enable for all Audio Tracks** in the **Mixer** category of the **Key Commands** dialog, you can record-enable all audio tracks simultaneously. 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 in the **Preferences** dialog (**VST** page) to show a warning message as soon as the **Processing Overload** indicator lights up during recording.

RELATED LINKS
Editing - Project & MixConsole on page 1132
VST on page 1149

Record Enabling Tracks on Selection

You can set up a preference so that tracks are record-enabled when you select them.

PROCEDURE

1. Select **Edit** > **Preferences**.
2. Open the **Editing—Project & MixConsole** page and activate **Enable Record on Selected Audio Track** or **Enable Record on Selected MIDI Track**.

RESULT

The tracks are record-enabled when you select them.

Activating Recording Manually

You can activate recording manually.

PROCEDURE

- Do one of the following:
  - Click **Record** on the **Transport** panel, on the toolbar, or in the **Transport Bar**.
  - Press **Num ***.

RESULT

Recording starts from the current cursor position.

NOTE

When you start recording in stop mode, you can start recording from the left locator. For this to work, you must select **Transport** > **Common Record Modes** and activate **Start Record at Left Locator/Punch In Position**. 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

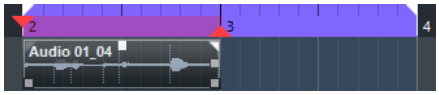
1. Set the left locator to the position where you want to start recording.

   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 left locator position, and the punch out point is positioned 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 248

Stopping Recording

You can stop recording manually.

PROCEDURE

- Do one of the following:
  - Click **Stop** on the **Transport** panel.
  - Press **Num ***.

RESULT

Recording stops while playback continues.

Stopping Recording Automatically with Punch Out

Activating **Punch Out** allows you to stop recording automatically at the defined punch out position.

PROCEDURE

- Activate **Punch Out** on the **Transport** panel.

RESULT

Recording stops automatically when the project cursor reaches the punch out position. Playback continues.

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 248

Stopping Recording and Playback

You can manually stop recording and playback.

PROCEDURE

- Do one of the following:
  - Click **Stop** on the **Transport** panel.
  - Press **Num 0**.

RESULT

Recording and playback stops.

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 **Activate 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 242
MIDI Recording on page 277
Audio Recording on page 272

Using Pre-Roll and Post-Roll

You can set up a pre-roll and a post-roll for recording.

PREREQUISITE

Activate **Stop after Automatic Punch Out** in the **Preferences** dialog (**Record** page).

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 playback continues for the time that has been set as post-roll amount.

Common Record Modes Menu

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 on 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 Project Cursor Position

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 229
Transport Panel Sections on page 224

Re-Recording

If you activate the **Re-Record** mode, you can reinitiate your recording by hitting the **Record** button again. Recording will restart from the initial position.

PROCEDURE

1. Select **Transport** > **Common Record Modes**, and activate **Re-Record**.
2. Activate recording.
3. Click **Record** again to restart recording.

RESULT

The project cursor jumps back to the record start position, and recording is reinitiated. Pre-roll and count-in 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 channel of the track. 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. In the **Preferences** dialog, select **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 **Studio Setup** dialog (**Audio System** page).

RELATED LINKS

VST on page 1149
Constrain Delay Compensation on page 677

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. In the **Preferences** dialog, select **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 macOS drivers. In ASIO Direct Monitoring mode, the monitoring is done in the audio hardware, and monitoring is controlled via 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 **Studio** > **Studio Setup**.
3. In the **Devices** list, select your audio hardware driver, and activate **Direct Monitoring**.

   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. In the **Preferences** dialog, select **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.

- Activate **Map Input Bus Metering to Audio Track (in Direct Monitoring)** in the **Preferences** dialog (**Metering** page).

  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.

RELATED LINKS
VST on page 1149

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. In the **Preferences** dialog, select **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 1140

Audio Recording Specifics

Specific preparations and settings are required for audio recording.

Audio Recording Preparations

Before you can record audio, you must make some preparations.

Selecting a Record File Format

You can set up the record file format, that is, the sample rate, bit depth, and the record file type for new audio files.

PROCEDURE

1. Select **Project** > **Project Setup**.
2. Set up the settings for **Sample Rate**, **Bit Depth**, and **Record File Type**.

   IMPORTANT

   The bit depth and the 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 95

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, if needed, you can select record folders independently for each audio track.

PROCEDURE

1. In the track list, select all tracks to which 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 the record folder or create a new folder by clicking **New Folder**.

   If you want 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 still reside within the project folder, which makes managing the project easier.

Getting the Track Ready for Recording

Before you can record audio, you must add a track and set it up.

Adding a Track and Setting the Channel Configuration

To record audio, you must add an audio track and set up its channel configuration. The channel configuration of the track determines the channel configuration of the recorded audio file.

PROCEDURE

1. In the global track controls area of the track list, click **Add Track** .
2. Click **Audio**.
3. In the **Count** value field, select the number of tracks that you want to add.
4. Open the **Configuration** pop-up menu, and select a channel configuration.
5. Optional: In the **Name** field, enter a track name.
6. Click **Add Track**.

RELATED LINKS
Add Track Dialog – Audio on page 110

RAM Requirements for Recording

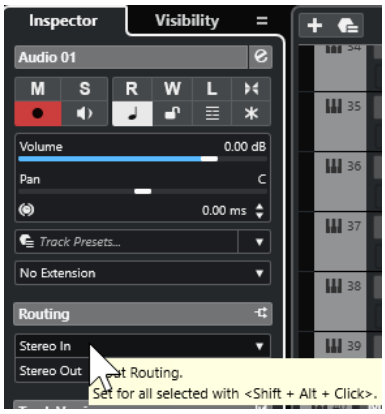
Each track on which you record requires a certain amount of RAM, and the memory usage increases, the longer the recording lasts. For each audio channel, 2.4 MB of RAM are required for **MixConsole** settings, etc. The memory usage increases with the length of the recording, the sample rate, and the number 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 records.

PROCEDURE

1. In the **Inspector** for the audio track, open the **Routing** section.
2. Open the **Input Routing** pop-up menu.



3. Select an input bus.

RELATED LINKS
Setting up Input and Output Ports on page 23
Audio Bus Setup on page 23
Basics Section for Audio Tracks on page 132

Audio Recording

To record audio, use 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 is calculated and displayed during the actual recording process. This real-time calculation uses some processing power. If your processor is slow or if you are working on a CPU-intensive project, deactivate **Create Audio Images during Record** in the **Preferences** dialog (**Record—Audio** page).

RELATED LINKS
Basic Recording Methods on page 263
Cycle Recording on page 266

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 the tracks you record on are not necessarily empty. 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 on the **Transport** panel.

Keep History

Existing events or portions of events that overlap with a new recording are kept.

Cycle History + Replace

Existing events or portions of events that overlap with 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 overlap with a new recording are replaced by the last recorded take.

RELATED LINKS
Transport Menu on page 229
Transport Panel Sections on page 224

Recording and Effects

Cubase allows you to add effects and/or EQ 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 record with effects, consider using 32-bit float or 64-bit float format. This way, the bit depth is not 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.

Undoing Recordings

You can undo a recording immediately after recording it.

PROCEDURE

- Select **Edit** > **Undo**.

RESULT

- The events that you just recorded are deleted from the **Project** window.
- The audio clips in the **Pool** are moved to the trash folder.

AFTER COMPLETING THIS TASK

To remove the recorded audio files from the hard disk, select **Media** > **Open Pool Window**, right-click the **Trash** icon and select **Empty Trash**.

RELATED LINKS
Pool Window on page 588

Recovery of Audio Recordings

Cubase allows you to recover audio recordings.

You can recover audio recordings in two situations:

- You hit **Record** too late.

  For this to work, you must specify an audio pre-record time.

- The system failed 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. In the **Preferences** dialog, select **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-recording possible.
3. Make sure that the 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 can leave the event where it is.
6. Select the **Object Selection** tool.
7. 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 1145

Recovery of Audio Recordings after System Failure

Cubase allows you to recover audio recordings after a system failure.

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 is capable of recovering audio recordings 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 are designed to cope with such situations, Steinberg cannot guarantee that other parts of the computer are not damaged as a consequence.

MIDI Recording Specifics

Specific preparations and settings are required for MIDI recordings.

RELATED LINKS
MIDI Recording Specifics on page 275
Recording in MIDI Editors on page 277
MIDI Record Modes on page 279

MIDI Recording 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 simultaneously, 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, you do not have to adjust any settings in the instrument.

On other instruments, use the front panel controls to specify the number of parts, timbres, and the like, 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 **Studio** > **Studio 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 **Input Routing** on the **Output Routing** pop-up menus.

Setting the MIDI Input

In the **Inspector**, 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 depend on the type of MIDI interface that you use. If you hold down **Shift**-**Alt/Opt**, the selected MIDI input is used for all selected MIDI tracks.

NOTE

If you select **All MIDI Inputs**, the track receives MIDI data from all available MIDI inputs.

Setting the MIDI Channel and Output

The MIDI channel and the 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 the output from 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 an output.
2. In the topmost **Inspector** section, open the **Output Routing** pop-up menu and select an output.

   The available outputs depend on the type of MIDI interface that you use. If you hold down **Shift**-**Alt/Opt**, the selected MIDI output is used for all selected MIDI tracks.
3. Open the **Group and Channel** pop-up menu, and select a MIDI channel.

   NOTE

   If you select **Any** as the 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 **Routing** section of the **Inspector**, open the **Program Selector** pop-up menu, and select a program.

   Program Change messages give you 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 the numbering of banks and programs may also vary. Refer to the documentation of your MIDI instruments for details.

RELATED LINKS
Basics Section for MIDI Tracks on page 137

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 the **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. Click **Record** on the **Transport** panel.

   You can also trigger the **Record** function via remote devices or via the corresponding key command.

RESULT

The MIDI data is recorded into the MIDI part that is open in the MIDI editor. If you record outside the part borders, the part is automatically enlarged.

RELATED LINKS

Key Editor Toolbar on page 815

MIDI Recording

To record MIDI, use 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 starting to play earlier. As a 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 in the **Preferences** dialog on the **MIDI** and on the **Record—MIDI** page.

RELATED LINKS

Basic Recording Methods on page 263
MIDI on page 1140
Record - MIDI on page 1146

Types of MIDI Messages

You can record different types of MIDI messages.

- To specify which event types are recorded, deactivate the options for the type of MIDI message that you want to record in the **Preferences** dialog (**MIDI—MIDI Filter** page).

RELATED LINKS
MIDI - MIDI Filter on page 1144

Note Messages

Cubase records note-on, note-off, and MIDI channel messages.

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 **Any** as the MIDI channel, the notes is played back on their original channels.

Continuous Messages

Pitchbend, aftertouch, and controllers, such as modulation wheel, sustain pedal, volume, etc. are considered continuous MIDI events, as opposed to the momentary key down and key up messages.

You can record continuous messages with or separate 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, the MIDI instrument identifies them as two simultaneously created recordings.

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 as a Program Change Message via MIDI.

You can record Program Change Messages with or separate 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, the MIDI instrument identifies them as two simultaneously created recordings.

System Exclusive Messages

SysEx (System Exclusive) 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 manual MIDI reset, select **MIDI** > **Reset**.
- If you want Cubase to perform a MIDI reset on stop, activate **Reset on Stop** in the **Preferences** dialog (**MIDI** page).
- If you want Cubase to insert a reset event at the end of a recorded part, activate **Insert Reset Events after Record** in the **Preferences** dialog (**MIDI** page).

  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 the 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 1140

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.

NOTE

If you activate **Record in Editor** to record MIDI data in the editor, all new recordings are merged into the active part, and the **MIDI Record Modes** do not apply.

- 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 **MIDI Recording Modes** section on the **Transport** panel.

MIDI Record Mode

New Parts

Existing parts that overlap with a new recording are kept. The new recording is saved as a new part.

Merge

Existing events in parts that overlap with a new recording are kept. The newly recorded events are added to the existing part.

Replace

Existing events in parts that overlap with a new recording are replaced.

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 **Cycled MIDI Recording Only** 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 is 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 (No Mute)

Same as **Stacked**, but parts are not muted.

RELATED LINKS
MIDI Recording Specifics on page 275
Recording in MIDI Editors on page 277
Transport Menu on page 229
Transport Panel Sections on page 224

Automatic MIDI Record Quantize

Cubase can automatically quantize MIDI notes on recording.

- **Automatic MIDI Record Quantize** AQ is available in the **MIDI Auto Quantize** section of the **Transport Bar**.

If you activate **Auto Quantize**, the notes that you record are automatically quantized according to the quantize settings.

RELATED LINKS
Quantizing MIDI and Audio on page 295
Quantize Panel on page 299

Recovery of MIDI Recordings

Cubase allows you to recover MIDI data, including controller data, that was captured in **Stop** mode or during playback.

The MIDI data is stored in the retrospective record buffer, and you can insert it as a MIDI part on the selected MIDI track.

The buffer captures up to 10000 MIDI events. This can amount to a MIDI recording of around 2 minutes and 30 seconds. However, if you use a keyboard that produces a large amount of MIDI controller events, such as the ROLI Seaboard, this only corresponds to a recording of around 20 seconds.

NOTE

In the **Preferences** dialog (**Record—MIDI** page), you can specify a **Retrospective Record Buffer Size**.

If the buffer is full, the MIDI events that were captured first are replaced by the new events. MIDI events in the buffer are also replaced in the following situations:

- You have inserted the retrospective recording on a track, and you play new events in **Stop** mode or during playback.
- You play MIDI notes in **Stop** mode, and you do not play for more than 30 seconds, before playing further MIDI events in **Stop** mode.

NOTE

You can also empty the buffer manually.

RELATED LINKS
Record - MIDI on page 1146
Emptying the Retrospective Record Buffer on page 283

Inserting a Retrospective Recording from All MIDI Inputs into the Selected Track

You can insert a retrospective recording, that is, MIDI data that was sent to **All MIDI Inputs** in **Stop** mode or during playback, into the selected track.

PREREQUISITE

You have played MIDI notes in **Stop** mode or during playback, and you want to recover them.

PROCEDURE

1. Select the MIDI track into which you want to insert the captured MIDI data.
2. Select **Transport** > **MIDI Retrospective Recording** > **Insert from All MIDI Inputs**.

RESULT

The MIDI data that was captured at **All MIDI Inputs** is inserted into the selected track as a single, linear MIDI part.

NOTE

If you insert buffer data from multiple selected tracks, the timing offsets between the data played on the different tracks are retained.

NOTE

If your MIDI track uses MIDI inserts and **Record Output to Track** is enabled in the **MIDI Inserts** section, the buffer data includes the events that are created by the MIDI inserts.

RELATED LINKS
Recording a MIDI Insert Effect on page 756
MIDI Inserts on page 754

Inserting a Retrospective Track Recording

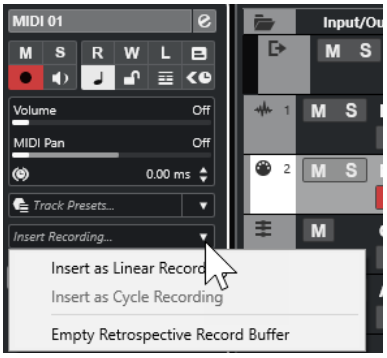
You can insert a retrospective track recording, that is, MIDI data that was sent to the track input in **Stop** mode or during playback, into the selected track.

PREREQUISITE

You have played MIDI notes in **Stop** mode or during playback, and you want to recover them.

PROCEDURE

1. Select the MIDI track into which you want to insert the captured MIDI data.
2. In the top section of the MIDI track **Inspector**, click **Retrospective Recording**.



3. From the pop-up menu, select one of the following:
   - To insert the MIDI data as one, continuous MIDI part, select **Insert as Linear Recording**.
   - To insert the MIDI data as stacked MIDI parts, select **Insert as Cycle Recording**.

     NOTE

     This is only available if your MIDI data was captured during playback, and if cycle mode was active.

RESULT

The MIDI data that was captured at the track input is inserted into the track.

NOTE

If the data was captured during playback, it is inserted at the position where you played it. If the data was captured in **Stop** mode, it is inserted at the project cursor position.

Inserting a Retrospective Track Recording into an Editor

You can insert a retrospective track recording, that is, MIDI data that was sent to the track input in **Stop** mode or during playback, into the MIDI part that is open in a MIDI editor.

PREREQUISITE

You have played MIDI notes in **Stop** mode or during playback, and you want to recover them.

PROCEDURE

1. Double-click the MIDI part where you want to insert the captured MIDI data to open it in a MIDI editor.
2. On the MIDI editor toolbar, click **Insert MIDI Retrospective Recording in Editor**.

RESULT

The MIDI data that was captured on the track input is inserted into the MIDI part.

- If the data was captured during playback, it is inserted into the MIDI part along the timeline.
- If the data was captured in **Stop** mode, it is inserted at the project cursor position.

Emptying the Retrospective Record Buffer

You can empty the retrospective record buffer manually.

PROCEDURE

- Do one of the following:
  - In the top section of the MIDI track **Inspector**, open the **Retrospective Recording** pop-up menu, and select **Empty Retrospective Record Buffer**.
  - Select a track, and select **Transport** > **MIDI Retrospective Recording** > **Empty All Buffers**.

Remaining Record Time

The **Max. Record Time** displays the time that is left for recording.

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 **Studio** > **More Options** > **Max. Record Time**.

NOTE

The remaining recording 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 available storage space.

Lock Record

The **Lock Record** function prevents you from accidentally deactivating record mode.

- Select **Edit** > **Key Commands**. 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, confirm this in the corresponding dialog. 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 is ignored in **Lock Record** mode.

Importing Audio and MIDI Files

You can add audio and MIDI files to your project by importing them.

Audio File Import

You can import compressed and uncompressed audio files in a variety of different formats. You can also import audio from audio CDs or extract the audio of video files.

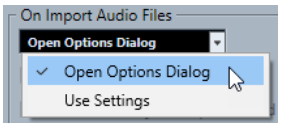
RELATED LINKS
Importing Audio Files on page 287
Importing Audio CD Tracks on page 288
Importing Audio from Video Files on page 291
Importing ReCycle Files on page 291
Importing Media on page 602

Setting up Audio File Import Options

You can specify how to handle audio files on import.

PROCEDURE

1. In the **Preferences** dialog, select **Editing** > **Audio**.
2. Select an option from the **On Import Audio Files** pop-up menu.



3. Click **OK**.

RESULT

The import settings are saved and take effect when you import audio.

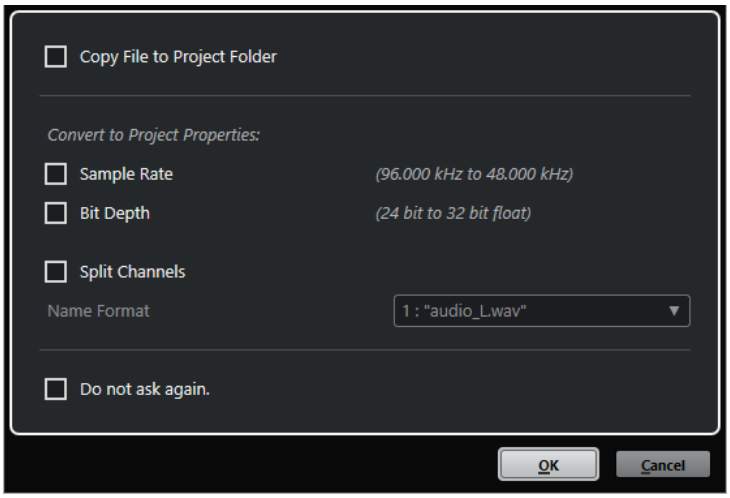
- If you selected **Open Options Dialog**, the **Import Options** dialog opens on every import and allows you to make your changes.
- If you selected **Use Settings**, the settings specified in the **On Import Audio Files** section of the **Preferences** dialog are used.

RELATED LINKS
Import Options Dialog for Audio Files on page 285
On Import Audio Files Settings on page 287

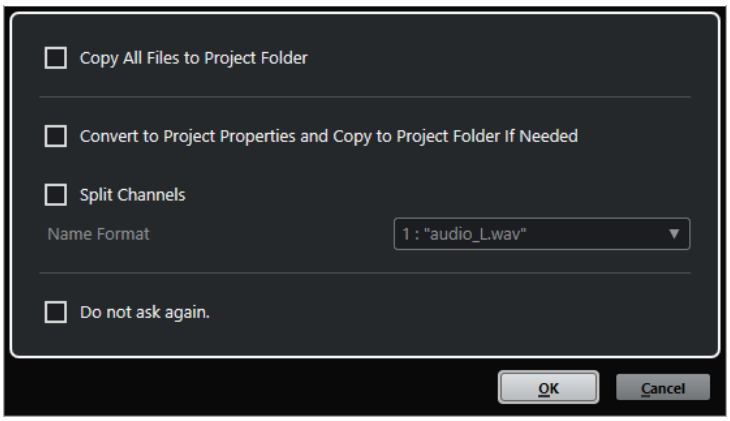
Import Options Dialog for Audio Files

The **Import Options** dialog allows you to make specific settings for the audio import.

- When you import audio files and **Open Options Dialog** is activated in the **On Import Audio Files** section of the **Preferences** dialog (**Editing—Audio** page), the **Import Options** dialog opens.



Import Options dialog for single file import



Import Options dialog for multipe file import

Copy File to Project Folder/Copy All Files to Project Folder

Copies the audio file to the **Audio** folder of the project and causes the clip refer to the copy.

Deactivate this option if you want the clip to refer to the original file in the original location. In this case, it is marked as “external” in the **Pool**.

Convert to Project Settings/Convert to Project Settings and Copy to Project Folder If Needed

Converts the imported file if the sample rate or the bit depth differ from the settings in the **Project Setup** dialog. For single file import, you can choose which properties are converted.

Split Channels

Splits stereo or multi-channel audio files into a corresponding number of mono files, one for each channel, and copies the imported files to the **Audio** folder of the project.

The split files are inserted into the project and into the **Pool** as separate mono tracks.

The **Name Format** pop-up menu allows you to specify the names of the split files. This allows for compatibility with other products when exchanging audio files.

Do not ask again

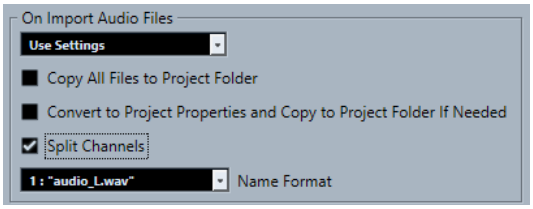
Always applies the current settings without opening the dialog again. You can reset this option in the **Preferences** dialog (**Editing—Audio** page).

RELATED LINKS
Setting up Audio File Import Options on page 285

On Import Audio Files Settings

You can set up standard settings that are performed automatically, each time you import audio files.

- When you import audio files and **Use Settings** is activated in the **On Import Audio Files** section of the **Preferences** dialog (**Editing—Audio** page), the settings are used for importing audio.



Copy File to Project Folder/Copy All Files to Project Folder

Copies the audio file to the **Audio** folder of the project and causes the clip refer to the copy.

Deactivate this option if you want the clip to refer to the original file in the original location. In this case, it is marked as “external” in the **Pool**.

Convert to Project Settings/Convert to Project Settings and Copy to Project Folder If Needed

Converts the imported file if the sample rate or the bit depth differ from the settings in the **Project Setup** dialog. For single file import, you can choose which properties are converted.

Split Channels

Splits stereo or multi-channel audio files into a corresponding number of mono files, one for each channel, and copies the imported files to the **Audio** folder of the project.

The split files are inserted into the project and into the **Pool** as separate mono tracks.

The **Name Format** pop-up menu allows you to specify the names of the split files. This allows for compatibility with other products when exchanging audio files.

Importing Audio Files

You can import uncompressed audio and compressed audio in several formats.

PROCEDURE

1. Select **File** > **Import** > **Audio File**.
2. In the file dialog that opens, locate and select the audio file, and click **Open**.
3. Make your changes in the **Import Options** dialog.

   NOTE

   If **Use Settings** is activated in the **Preferences** dialog (**Editing—Audio** page), the corresponding import settings are used.

RESULT

In the **Project** window, an event referencing the audio file is inserted into the selected track at the project cursor position. If no track was selected, a new track is created.

A new audio clip is created and added to the **Pool**.

If you chose a compressed audio file other than FLAC, Cubase copies the original compressed file and converts it to wave format (Windows) or AIFF format (macOS).

NOTE

The resulting Wave/AIFF file is significantly larger than the original compressed file.

The imported file is placed in the **Audio** folder of the project.

RELATED LINKS

Setting up Audio File Import Options on page 285

Supported Compressed Audio File Formats

Cubase allows you to import compressed audio files.

The following compressed audio file formats are supported:

FLAC file

This is an open source format that reduces the size of audio files by 50% to 60%, compared to regular Wave files. The file extension is **.flac**.

MPEG 1 Layer 3 file

This is a family of standards used for encoding audio-visual information, such as movies, video, and music in a digital compressed format. Cubase can read MPEG Layer 2 and MPEG Layer 3. MP3 files are highly compressed files that still provide good audio quality. The file extension is **.mp3**.

Ogg Vorbis file

This is an open source, patent-free audio encoding and streaming technology. The Ogg Vorbis encoder uses variable bit rate encoding. It offers small, compressed audio files of comparatively high audio quality. The file extension is**.ogg**.

Windows Media Audio file (Windows only)

This is an audio file format defined by Microsoft Inc. 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 file extension is**.wma**.

Importing Audio CD Tracks

You can import audio from audio CDs into Cubase projects.

PROCEDURE

1. Select **File** > **Import** > **Audio CD** to import CD tracks into the **Project** window.
2. Activate every audio file that you want to import in the **Copy** column.
3. Optional: Set a **Default Name** and a **Destination Folder** for the imported audio files.
4. Click the **Copy** button to create a local copy of the audio files or sections.
5. Click **OK**.

RESULT

The copied audio files are imported into the **Project** window and inserted into new tracks at the project cursor position. By default, imported audio CD tracks are saved as wave files (Windows) or AIFF files (macOS), in the **Audio** folder of the current project.

New audio clips are created and added to the **Pool**.

NOTE

You can also import audio files to the **Pool** without importing them into the **Project** window.

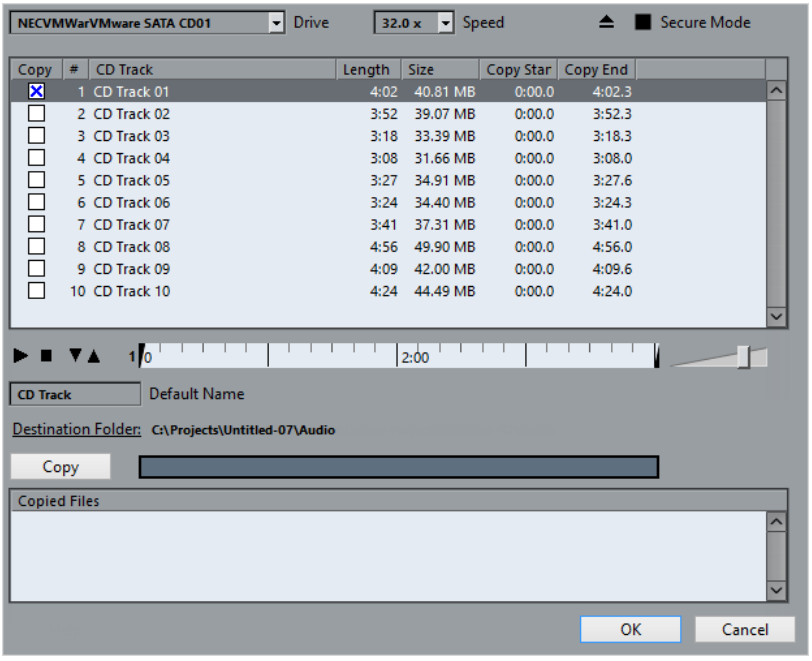
RELATED LINKS

Importing Media on page 602

Import From Audio CD Dialog

The **Import from Audio CD** dialog allows you to specify how the CD tracks are imported.

- To open the **Import from Audio CD** dialog, select **File** > **Import** > **Audio CD**.



Drive

Opens a pop-up menu that allows you to select the correct CD drive.

Speed (Windows only)

Allows you to select the data transfer speed.

NOTE

While you normally want to use the fastest possible speed, you may have to select a slower speed for flawless audio extraction.

Eject CD

Opens the CD drive.

Secure Mode (Windows only)

Activates error checking and correction when reading the CD.

Columns

The columns in the dialog have the following functions:

Copy

Activate this option for the tracks that you want to copy/import.

#

Shows the track number.

CD Track

The name of the CD track. On import, this is used as file name. It is provided automatically from CDDB, if available.

To rename a track, click the track name and enter a new name.

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

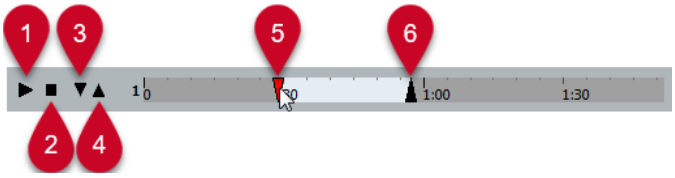
The start of the section that is imported. On the ruler, drag the **Left Marker** to the right to adjust this.

Copy End

The end of the section that is imported. On the ruler, drag the **Right Marker** to the left to adjust this.

The Ruler

The ruler has the following functions:



1 **Play Tracks**

Plays back the selected track from the start to the end or from the left marker to the right marker.

2 **Stop Playback**

Stops playback.

3 **Play from Left Marker**

Starts playback at the left marker.

4 **Play to Right Marker**

Starts playback a few moments prior to the right marker and stops at the right marker.

5 **Left Marker**

Allows you to set the copy start manually.

6 **Right Marker**

Allows you to set the copy end manually.

Destination Folder

Allows you to select a folder for the imported files.

Copy

Copies the files.

Copied Files

Lists the files that you copied for import.

Importing Audio from Video Files

You can import audio from a video file without importing the video itself.

PROCEDURE

1. Select **File** > **Import** > **Audio from Video File**.
2. In the file dialog that opens, locate and select the video file, and click **Open**.

RESULT

The audio of the selected video file is extracted and converted to a wave file that is saved in the **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.

RELATED LINKS

Extracting Audio from Video on page 1093
Importing Video Files on page 1081

Importing ReCycle Files

You can import REX and REX2 audio files created by ReCycle from Propellerhead Software. ReCycle slices a loop and creates separate samples of each beat, so that you can tempo match and edit a loop as if it was made of individual sounds.

PREREQUISITE

REX Shared Library is installed on your system.

PROCEDURE

1. Select an audio track, and move the project cursor to where you want the imported file to start.

   If you set the audio track to musical time base, you can change the tempo later on, and the imported REX file automatically adjusts.
2. Select **File** > **Import** > **Audio File**.
3. In the file dialog, open the file type pop-up menu, and select **REX File** or **REX 2 File**.
4. Select the file you want to import, and click **Open**.

RESULT

The file is imported and automatically adjusted to the current Cubase tempo.

The imported REX file consists of several events, one for each slice in the loop. The events are automatically placed in an audio part on the selected track and positioned so that the original internal timing of the loop is preserved.

AFTER COMPLETING THIS TASK

Open the part in the **Audio Part Editor** to edit each slice separately by muting, moving, and resizing events, adding effects and processing, for example.

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

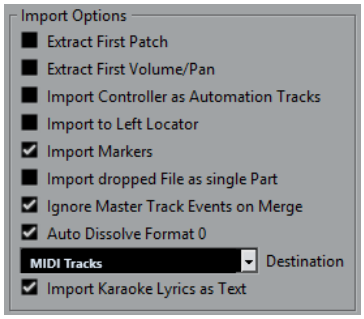
Slices on page 492

MIDI File Import

Cubase can import standard MIDI files. This allows you to transfer MIDI material to and from virtually any MIDI application, on any platform.

Import Options for MIDI Files

The **Import Options** for MIDI files allow you to specify what data to include in imported MIDI files.



Extract First Patch

Converts the first **Program Change** and **Bank Select** events for each track to **Inspector** settings for the track.

Extract First Volume/Pan

Converts the first **MIDI Volume** and **Pan** events for each track to **Inspector** settings for the track.

Import Controller as Automation Tracks

Converts **MIDI Controller** events in the MIDI file to automation data for the MIDI tracks.

Import to Left Locator

Aligns the imported MIDI file to the position of the left locator.

Import Markers

Imports Standard MIDI File Markers in the file and converts them to Cubase markers.

Import Dropped File as Single Part

Places the file on one track if you drag a MIDI file into the project.

Ignore Master Track Events on Merge

Ignores tempo track data if you import a MIDI file into the current project. The imported MIDI file adapts to the current tempo track in the project.

Auto Dissolve Format 0

Automatically dissolves imported MIDI files of type 0. Each embedded MIDI channel in the file is placed on a separate track in the **Project** window.

Destination

Allows you to specify what happens when you drag a MIDI file into the project.

- **MIDI Tracks** creates MIDI tracks for the imported file.
- **Instrument Tracks** creates instrument tracks for each MIDI channel in the MIDI file and causes the program to automatically load appropriate presets.
- **HALion Sonic multi-timbral** creates several MIDI tracks, each routed to a separate instance of HALion Sonic in the **VST Instruments** window, and loads the appropriate presets.

Import Karaoke Lyrics as Text

Converts 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**.

Importing MIDI Files

You can import MIDI files into Cubase.

PROCEDURE

1. Select **File** > **Import** > **MIDI File**.
2. Optional: If a project is open, choose if you want to create a new project.

   If you select **No**, the MIDI file is imported into the current project.
3. In the file dialog that opens, locate and select the MIDI file, and click **Open**.

RESULT

The MIDI file is imported. The result depends on the contents of the MIDI file and the settings you made in the **Import Options** section of the **Preferences** dialog (**MIDI—MIDI File** page).

It is also possible to import a MIDI file from disk by dragging it from the File Explorer/macOS Finder into the **Project** window. The **Import Options** apply as well.

RELATED LINKS

Import Options for MIDI Files on page 292
Markers on page 337

Yamaha XF 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** to add or change lyrics, for example.

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 with the MIDI data, mute or delete the tracks containing the XF data.

MIDI Loops

In Cubase, you can import MIDI loops.

To import MIDI loops, use the **MediaBay**. MIDI loops have the file extension `.midiloop`.

RELATED LINKS
Importing MIDI Loops on page 678

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.

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 297
Quantizing Audio Event Lengths (AudioWarp Quantizing) on page 298
Quantizing MIDI Event Starts on page 296
Quantizing MIDI Event Lengths on page 297
Quantizing MIDI Event Ends on page 297

Quantize Functions

The quantize functions are available in the **Edit** menu and in the **Snap** and **Quantize** sections of the **Project** window toolbar and the **Sample Editor** 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 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 preset based on hitpoints that you have created in the **Sample Editor**.

Quantize Functions on the Project Window Toolbar and on the Sample Editor Toolbar

Apply Quantize

Applies the quantize settings.

Quantize Presets

Allows you to select a quantize preset.

Soft Quantize On/Off

Activates/Deactivates soft quantize.

AudioWarp Quantize On/Off

Activates/Deactivates **AudioWarp** quantize.

Open Quantize Panel

Opens the **Quantize Panel**.

Quantizing MIDI Event Starts

You can quantize the MIDI event start positions.

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

You can quantize the 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** in the **Length Quantize** pop-up menu of the **Key Editor** toolbar, 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

You can quantize the MIDI event end positions.

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

You can quantize the audio event start positions.

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)

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 On/Off**.
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 with 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

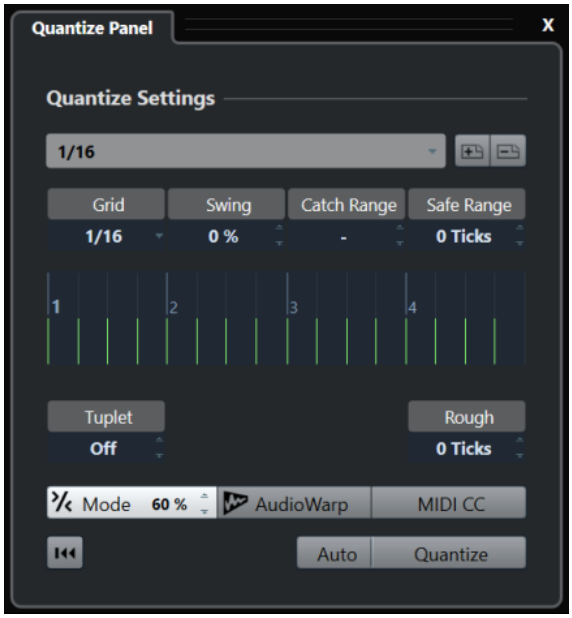
Quantize Panel on page 299
Slices on page 492

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.

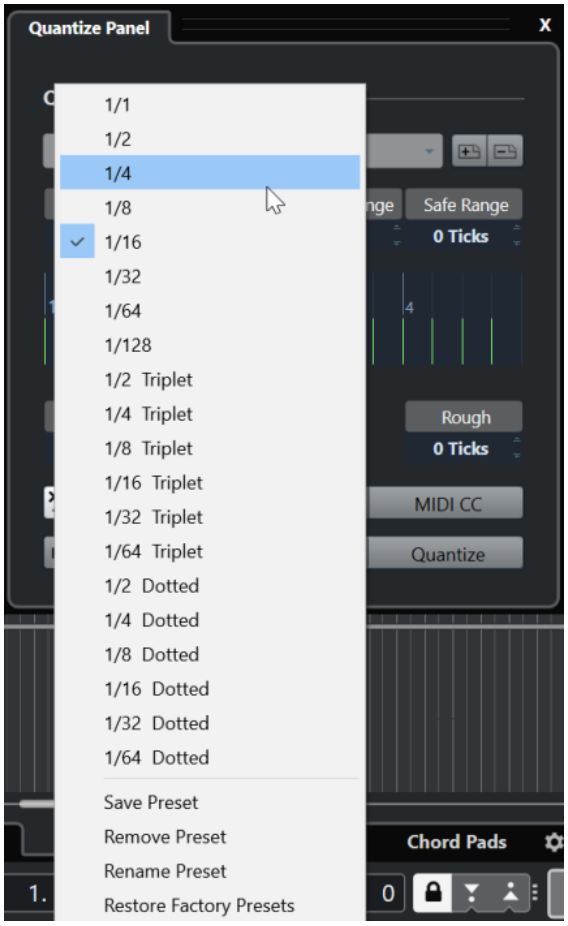
To open the **Quantize Panel**, perform one of the following actions:

- Click **Open Quantize Panel** on the toolbar.
- Select **Edit** > **Quantize Panel**.



Quantize Presets

The quantize presets are displayed at the top of the **Quantize Panel**. 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 presets, 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 preset, 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 automatically detected and displayed.

3. Open the **Create** section, and click **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.

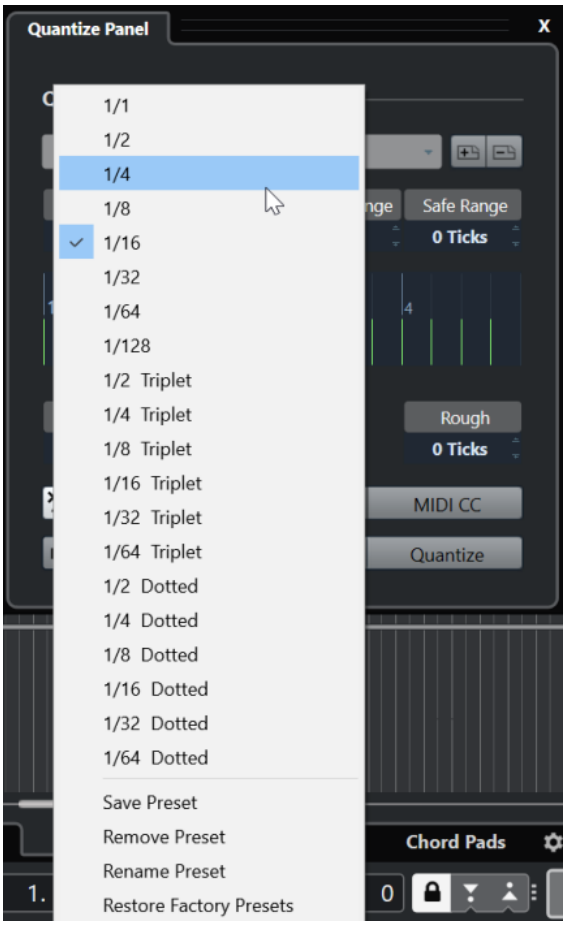
RELATED LINKS

Creating a Groove Quantize Preset on page 494
Quantize Presets on page 300

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 on the **Quantize Panel**.



The following options are 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 only affects audio or MIDI within the set distance from the grid lines. This is reflected in the grid display.

Safe Range

Creates a safe zone before and after the quantize positions. If you specify a distance in ticks (120 ticks = one 16th note), events within this zone are not quantized. As a result, 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, thereby creating n-tuplets.

Rough

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.

Soft Quantize Mode

Applies a loose quantization so that your audio or MIDI moves only part of the way to the closest quantize grid position. The **Quantize Strength** value to the right determines how close your audio or MIDI moves towards the grid.

NOTE

Soft quantizing is based on the current quantized positions and not on the original event positions. You can repeatedly use the soft quantize 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 with the defined quantize grid.

MIDI CC

Automatically moves controllers related to MIDI notes (pitchbend, etc.) 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

Immediately applies any changes to the selected parts or events. A way of using this feature is to set up a playback loop and to adjust the settings until you are satisfied with the result.

Quantize

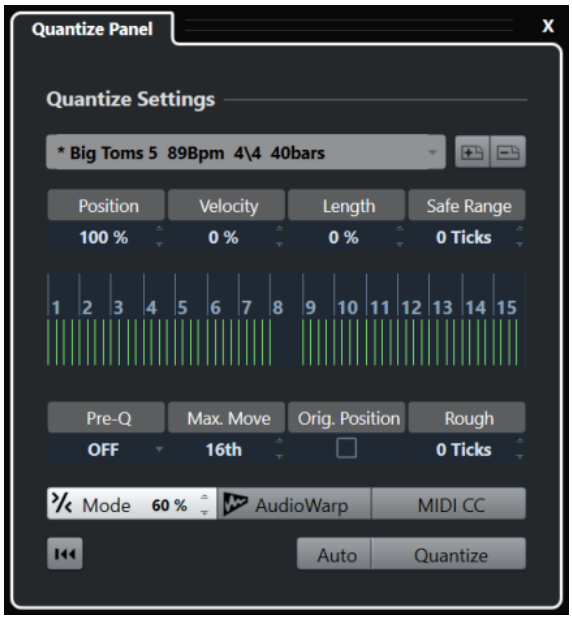
Applies your settings.

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. Perform one of the following actions:

- Drag the part or event to 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.

Safe Range

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 within this zone are not quantized. As a result, 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 moves 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 for audio or MIDI movement.

Orig. Position

Sets the original starting position of the quantized material as the starting point of the quantizing. This allows you to synchronize material that does not start from bar 1 of the project.

Rough Quantize

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.

Soft Quantize Mode

Applies a loose quantization so that your audio or MIDI moves only part of the way to the closest quantize grid position. The **Quantize Strength** value to the right determines how close your audio or MIDI moves towards the grid.

NOTE

Soft quantizing is based on the current quantized positions and not on the original event positions. You can repeatedly use the soft quantize 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 with the defined quantize grid.

MIDI CC

Automatically moves controllers related to MIDI notes (pitchbend, etc.) 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

Immediately applies any changes to the selected parts or events. A way of using this feature is to set up a playback loop and to adjust the settings until you are satisfied with the result.

Quantize

Applies your settings.

RELATED LINKS

Creating Groove Quantize Presets on page 301

Fades, Crossfades, and Envelopes

Fades allow you to gradually increase or decrease the volume at the start or at the 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 real time 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 306
Creating Clip-Based Fades on page 311
Crossfades on page 312
Auto Fades and Crossfades on page 315
Event Envelopes on page 317

Event-Based Fades

You can create event-based fade ins and fade outs. These are calculated in real time 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 307
Creating and Editing Fades with the Range Selection Tool on page 308
Fade Dialog for Event-Based Fades on page 309

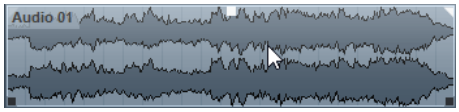
Creating and Editing Fades with the Handles

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.

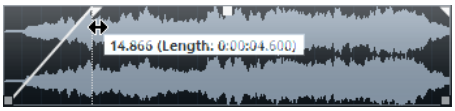
PROCEDURE

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:
   - To create a fade in, drag the left fade handle to the right.

   - To create a fade out, drag the right fade handle to the left.

RESULT

The fade is applied and displayed 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.

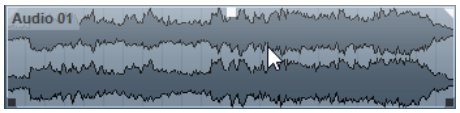
Event Handles

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 permanently, that is, not only when you point at events, activate **Show Event Volume Curves Always** in the **Preferences** dialog (**Event Display—Audio** page).



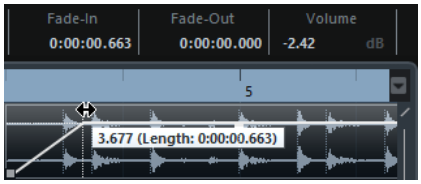
In the upper left and right corners, you find triangular fade handles that allow you to change the fade-in or fade-out length. The square handle at the top, in the middle, allows you to change the volume.

- 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, activate **Use Mouse Wheel for Event Volume and Fades** in the **Preferences** dialog (**Editing—Audio** page). To move the fade in end point, press **Shift** while moving the mouse wheel, and position the mouse pointer somewhere in the left half of the event. 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. Using the **Range Selection** tool is 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.

   NOTE

   If you select a range that spans multiple audio events on multiple audio tracks, you can create fades on multiple tracks.

2. Perform one of the following actions:

   - To create a fade in that starts at the event start, select a range, and select **Audio** > **Fades** > **Fade In to Range Start**.

     NOTE

     If the range starts at the event start or earlier, the fade in starts at the event start and ends at the range end.

   - To create a fade out that ends at the event end, select a range that ends at the event end, and select **Audio** > **Fades** > **Fade Out from Range End**.

NOTE

If the range ends at the event end or later, the fade out starts at the range start and ends at the event end.

- To create a fade in and a fade out, select a range in the middle of the event, and select **Audio** > **Fades** > **Adjust Fades to Range**.

Applying Default Fades

You can use default fades to create event-based fade ins and fade outs.

PROCEDURE

1. Select one or more audio events in the **Project** window.
2. Perform one of the following actions:
   - To create a fade in, select **Audio** > **Fades** > **Apply Standard Fade In**.
   - To create a fade out, select **Audio** > **Fades** > **Apply Standard Fade Out**.

RESULT

An event-based fade of the same length and shape as the default fade is applied.

NOTE

To change the default fade, select **Audio** > **Fades** > **Open Fade Editor(s)**, set up the fade, and click **As Default**.

RELATED LINKS

Fade Dialog for Event-Based Fades on page 309

Removing Event-Based Fades

You can remove event-based fades.

PROCEDURE

1. Select the event with the **Object Selection** tool.
2. Do one of the following:
   - To remove a fade in, select **Audio** > **Fades** > **Remove Fade In**.
   - To remove a fade out, select **Audio** > **Fades** > **Remove Fade Out**.
   - To remove a fade in and a fade out, select **Audio** > **Fades** > **Remove Fades**.

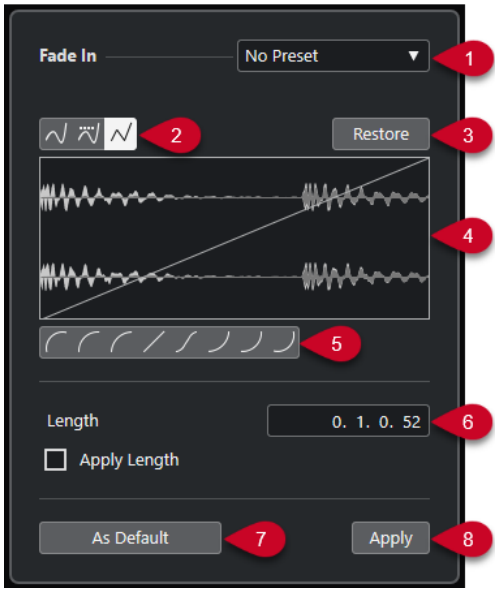
Fade Dialog for Event-Based Fades

The fade dialog for event-based fades allows you to set up the selected 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** > **Fades** > **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, for example.



The following options are available:

1 **Presets pop-up menu**

Allows you to set up presets for fade-in or fade-out curves.

- To apply a saved preset, select it from the pop-up menu.
- To remove a saved preset, select it from the pop-up menu and click **Remove**.

2 **Curve Type buttons**

Apply a spline interpolation, a damped spline interpolation, or a linear interpolation to the curve.

3 **Restore**

Click this button to cancel any changes you have made since opening the dialog.

4 **Fade display**

Shows the shape of the fade curve. The darker waveform displays the result, whereas the current waveform is displayed in a lighter shade.

- 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 **Curve Shape buttons**

Give you quick access to some common curve shapes.

6 **Length field**

Allows you to enter fade lengths numerically. The format of the values displayed here is determined by the time display on 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 **As Default**

Saves the current settings as the default fade.

8 **Apply**

Applies the current fade settings to the selected events.

Creating Clip-Based Fades

You can create and edit clip-based fade ins and fade outs using **Direct Offline Processing**. These fades are applied to the audio clip. Events that refer to the same clip receive 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** > **Processes** > **Fade In**.
   - To create a fade out, select **Audio** > **Processes** > **Fade Out**.
3. In the **Direct Offline Processing** window, click the **Curve Type** buttons to specify a fade curve, or click and drag with the mouse to draw in a curve in the curve display.
4. Optional: Activate **Audition** to hear the effect of the specified fade on the selected audio event.

RESULT

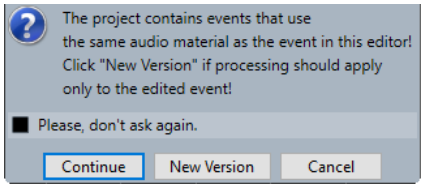
The fade is applied to the audio. You can remove or modify the fades at any time using the **Direct Offline Processing** window.

RELATED LINKS

Direct Offline Processing on page 435
Fade In/Fade Out on page 442
On Processing Shared Clips on page 311

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

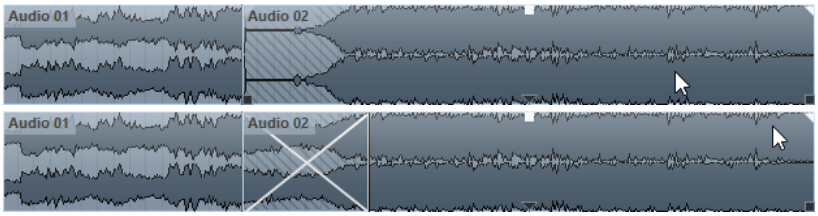
Click **New Version** to create a separate, new version of the audio clip for the selected event.

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 overlap, a crossfade cannot be created.

RELATED LINKS
Crossfade Editor on page 313

Creating Crossfades

You can create crossfades between two consecutive audio events.

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** > **Fades** > **Crossfade** or use the key command **X**.

RESULT

The crossfade is applied.

Changing the Crossfade Length

You can change the length of a crossfade.

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** > **Fades** > **Adjust Fades to Range**.

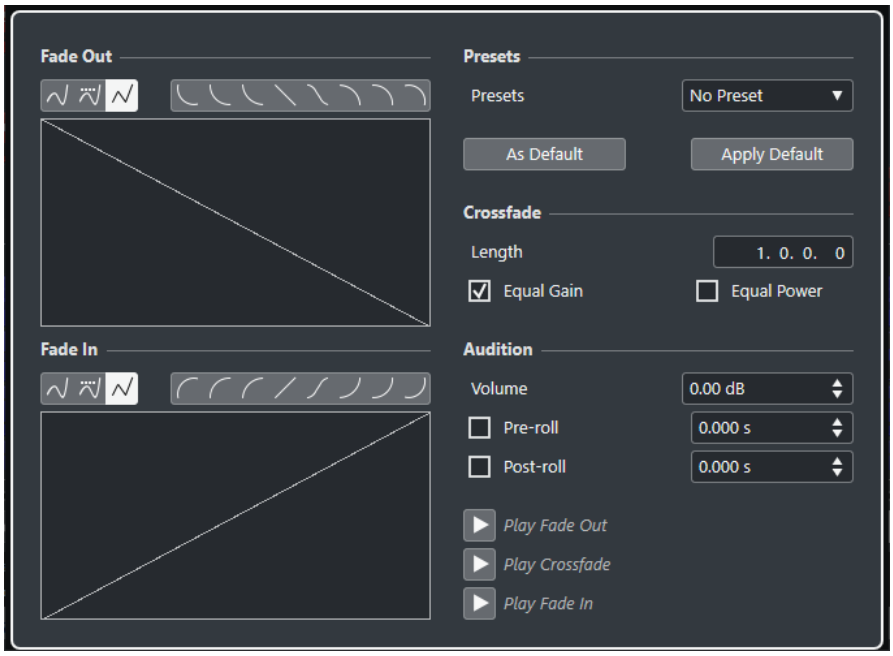
RESULT

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** > **Fades** > **Crossfade** or double-click the crossfade zone.



Curve Type buttons

Determine whether the corresponding fade curve uses **Spline Interpolation**, **Damped Spline Interpolation**, or **Linear Interpolation**.

Curve Shape buttons

Give you quick access to some common curve shapes.

Fade Curve displays

Show 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.

Presets

Click **Save Preset** on the **Presets** pop-up menu to store the crossfade settings so that you can apply them to other events.

- To remove a preset, select it on the pop-up menu and click **Remove Preset**.

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.

Length

Specifies the length of the crossfade area. Cubase tries to center the crossfade, that is, the length change is 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.

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 can be beneficial 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.

Volume

Allows you to set the audition level.

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 buttons

- To audition the fade-out part of the crossfade, click **Play Fade Out**.
- To audition the whole crossfade, click **Play Crossfade**.
- To audition the fade-in part of the crossfade, click **Play Fade In**.

You can set up key commands for this in the **Key Commands** dialog.

RELATED LINKS

Key Commands on page 1094
Event Handles on page 307
Auto-Scroll Settings Menu on page 245

Removing Crossfades

You can remove 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** > **Fades** > **Remove Fades**.

RESULT

The selected crossfades are removed.

NOTE

You can also remove a crossfade by clicking and dragging it outside the event.

Auto Fades and Crossfades

Cubase features an **Auto Fade** function that can be set either globally or 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 real time during playback, applying auto fades to a higher number of audio events results in a higher demand on the processor.

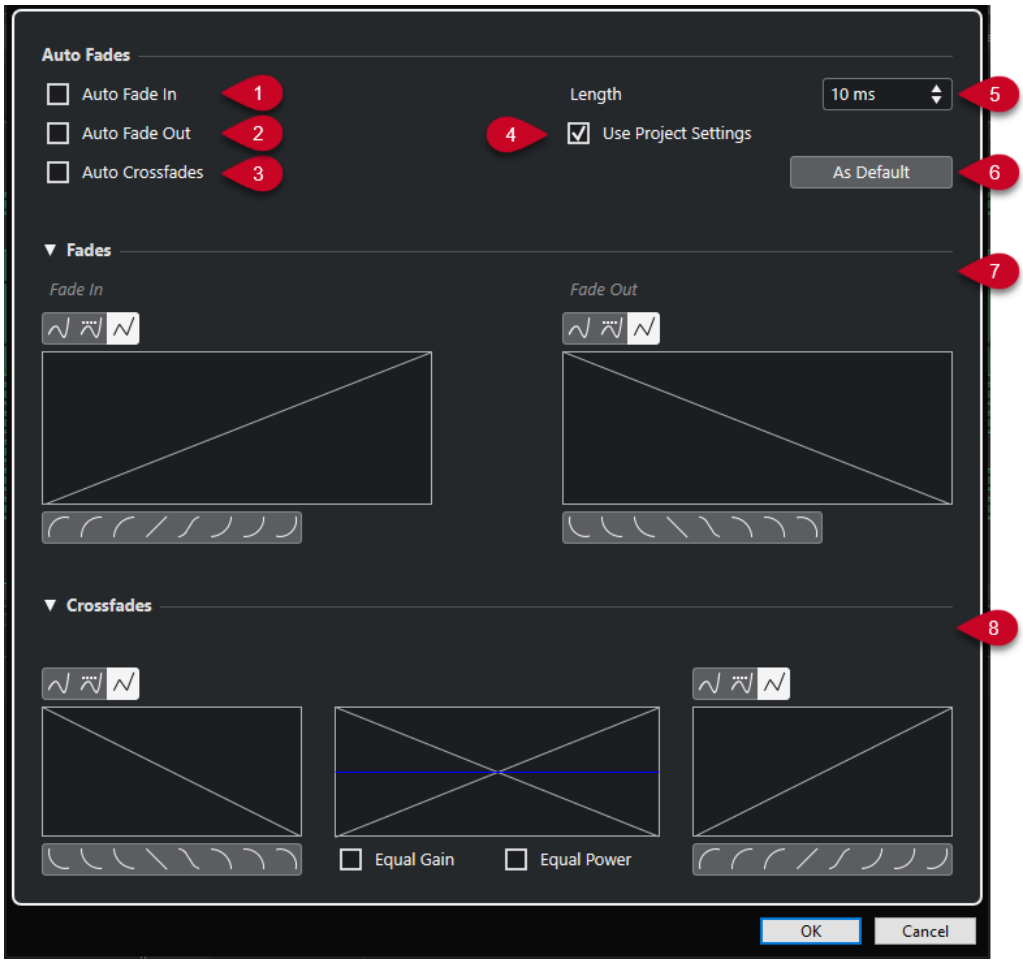
NOTE

Auto fades are not indicated by fade lines.

Auto Fades Dialog

The **Auto Fades** dialog allows you to set up auto fades and crossfades, either for the entire project or individually, 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 **Auto Fade In**

Activates auto fade ins.

2 **Auto Fade Out**

Activates auto fade outs.

3 **Auto Crossfades**

Activates auto crossfades.

4 **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. To apply the global settings again, activate **Use Project Settings**.

5 **Length**

Specifies the length of the auto fades or crossfades.

6 **As Default**

Saves the current settings as default.

7 **Fades section**

Provides the settings for auto fades.

The **Curve Type** buttons allow you to determine whether the corresponding fade curve uses **Spline Interpolation**, **Damped Spline Interpolation** or **Linear Interpolation**.

The **Curve Shape** buttons give you quick access to common curve shapes.

8 **Crossfades section**

Provides 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.

Making Global Auto Fade Settings

You can set up auto fades and crossfades for the whole project.

PROCEDURE

1. Select **Project** > **Auto Fades Settings**.
   This opens the **Auto Fades** dialog for the project.
2. Set up the fades as desired.
3. Click **OK**.

RELATED LINKS
Fade Dialog for Event-Based Fades on page 309
Crossfade Editor on page 313

Making Auto Fade Settings for Individual Tracks

As auto fades use computing power, we recommend turning global auto fades off and activating them for individual tracks only.

PROCEDURE

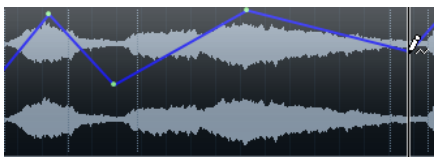
1. Perform one of the following actions:
   - Right-click the track in the track list. From the context menu, select **Auto Fades Settings**.
   - Select the track. In the **Inspector**, click **Auto Fades Settings**.

   The **Auto Fades** dialog for the track opens.
2. Deactivate **Use Project Settings**.
   Any settings you make are applied to the track only.
3. Set up the auto fades.
4. Click **OK**.

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.



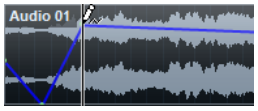
The envelope curve is a part of the audio event. If you move or copy the event, the event envelope follows.

Creating Event-Based Volume Changes

You can create volume changes for the audio event.

PROCEDURE

1. Zoom in on the event so that you can clearly see its waveform.
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

You can remove the entire event envelope or single curve points.

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

You can create volume changes for the audio clip. The audio event changes accordingly.

PROCEDURE

1. In the **Project** window, select the event.
2. Select **Audio** > **Processes** > **Envelope**.
3. In the **Direct Offline Processing** dialog, make your changes, and click **Apply**.

RESULT

The volume change is created. The waveform image of the event changes according to the volume change.

RELATED LINKS

Envelope on page 442

Arranger Track

The arranger functions in Cubase allow you to work in a non-linear fashion. Using an arranger track allows you to determine how and when specific sections are played back, even for live performances. This way, you do not need to move, copy, and paste events in the **Project** window.

NOTE

There can only be one arranger track in a project.

To use the arranger functions, 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.

To edit arranger events, use 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 319
Setting up an Arranger Chain and Adding Events on page 324
Flattening the Arranger Chain on page 325

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
Arranger Track on page 126
Setting up an Arranger Chain and Adding Events on page 324
Snap Function on page 80
Snap Types Menu 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, such as Intro, Chorus, Bridge.

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.
   - In the **Arranger** section of the **Inspector** or in the **Arranger Editor**, hold down **Alt/Opt**, and double-click the name in the arranger chain.

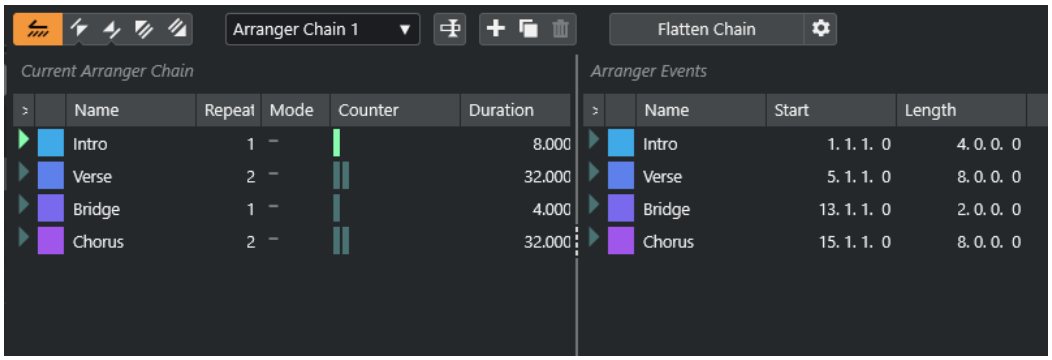
3. Enter a new name.

Arranger Editor

The **Arranger Editor** allows you to set up arranger chains.

To open the **Arranger Editor**, select the arranger track, and do one of the following:

- Click **Open Arranger Editor** in the track list.
- Click **Open Arranger Editor** on the **Arranger Track** section header of the **Inspector**.



Arranger toolbar
Shows the transport buttons, the arranger transport buttons, and the arranger tools.

Current Arranger Chain
Shows the order in which the events are played back, from top to bottom, and how many times they are repeated.

NOTE

Initially, the arranger chain is empty. To use it, add events from the **Arranger Events** list.

Arranger Events

Lists the available arranger events in the same order as they appear on the timeline.

Arranger Editor Toolbar

The **Arranger Editor** contains tools and shortcuts for setting the flatten options.

To open the **Arranger Editor**, select the arranger track, and do one of the following:

- Click **Open Arranger Editor** in the track list.
- Click **Open Arranger Editor** on the **Arranger Track** section header of the **Inspector**.

Activate Arranger Mode

Activates playback in arranger mode.

Previous Chain Step

Navigates to the previous entry in the current arranger chain list. **Alt**-click to jump to the first chain step.

Next Chain Step

Navigates to the next entry in the current arranger chain list. **Alt**-click to jump to the last chain step.

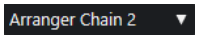
First Repeat of Current Chain Step

Navigates to the first repeat of the current entry in the current arranger chain list.

Last Repeat of Current Chain Step

Navigates to the last repeat of the current entry in the current arranger chain list.

Select Active Chain



Allows you to select and activate an arranger chain.

Rename Arranger Chain

Allows you to rename the current arranger chain.

Create New Chain

Creates a new, empty arranger chain.

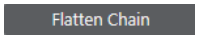
Duplicate Current Chain

Creates a duplicate of the current arranger chain, containing the same events.

Remove Current Chain

Removes the selected arranger chain. This is only available if you have created more than one arranger chain.

Flatten Chain



Converts the current arranger chain into a linear project.

NOTE

Flattening the arranger chain may remove events and parts from the project. Only use **Flatten** when you are sure that 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.

Flatten (with Options & Preferences)

Allows you to set up the flatten options.

Arranger Chain Repeat Modes

The **Arranger Editor** comes with a function that allows you to repeat and loop your arranger events. This way, you can create a sketch of a song structure.

To open the **Arranger Editor**, select the arranger track, and do one of the following:

- Click **Open Arranger Editor** in the track list .
- Click **Open Arranger Editor** on the **Arranger Track** section header of the **Inspector** .

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.

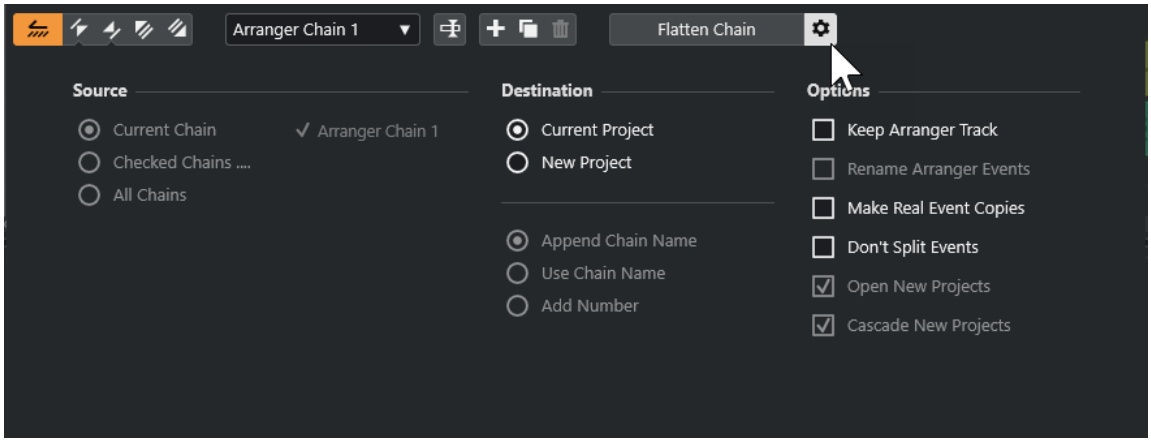
Flatten Options & Preferences

The flatten options allow you to define what happens when you flatten the arranger track.

NOTE

Flattening the arranger chain may remove events and parts from the project. Only use **Flatten** when you are sure that 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.

- To show the flatten options, open the **Arranger Editor**, and 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 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 325

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. Do one of the following:
   - Click **Open Arranger Editor** in the track list.
   - Click **Open Arranger Editor** on the **Arranger Track** section header of the **Inspector**.
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 322

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/Opt** 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, and select **Remove Touched**.
- To remove several events, select them, right-click, and select **Remove Selected**.

RELATED LINKS

Arranger Chain Repeat Modes on page 322

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 into 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 are sure that 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

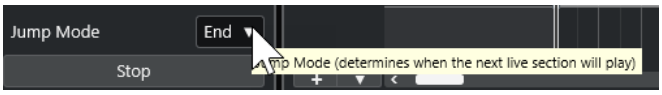
If you have set up an arranger track and play it back, you have live access to the playback order. This way, you can loop your arranger events with more flexibility regarding the length of the playback.

PREREQUISITE

An arranger chain is set up, and the arranger mode is activated.

PROCEDURE

1. 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** after the time interval set in pop-up menu, click **Stop**.
- To continue playback from a specific arranger event, click the arranger event in the **Current Arranger Chain** list.

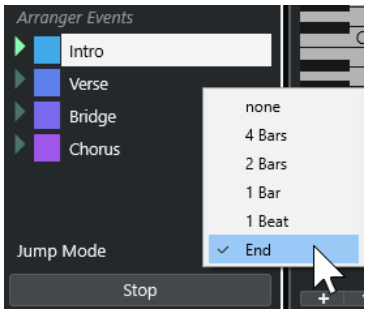
RELATED LINKS

Jump Mode Options on page 326

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.

- To show the **Inspector** for the arranger track, select the arranger track in the track list.



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 end of the event.

1 Bar

Jumps to the next section at the next barline.

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.

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.

NOTE

The following values and settings are just meant as an example.

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**.
   The arranger track is added.
6. On the arranger track, 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 start playback.

9. On your external sync master device, start the 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.

RELATED LINKS

Arranger Track on page 126

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 that has 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 document **Plug-in Reference**).

RELATED LINKS

Transposing with the Project Root Key on page 330
Transposing Sections of a Project with Transpose Events on page 333
Transposing Individual Parts or Events using the Info Line on page 335
MIDI Modifiers on page 750
Transpose and Velocity on the Info Line on page 757
Transpose Setup Dialog on page 767

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.

Right-click the toolbar and activate **Project Root Key**. To change the project root key, use the **Project Root Key** pop-up menu.

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 330

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

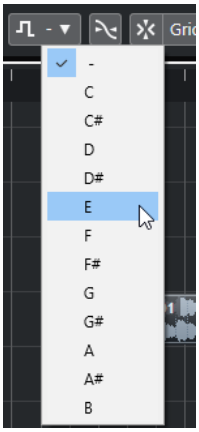
You have opened a project that contains audio loops with different root keys.

PROCEDURE

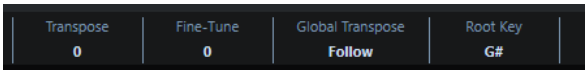
1. Optional: Select the drum and percussion loops in your project, and set the **Global Transpose** setting on the info line to **Independent**.

   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 are set to 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 336
Transpose Track and Recording on page 335

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.

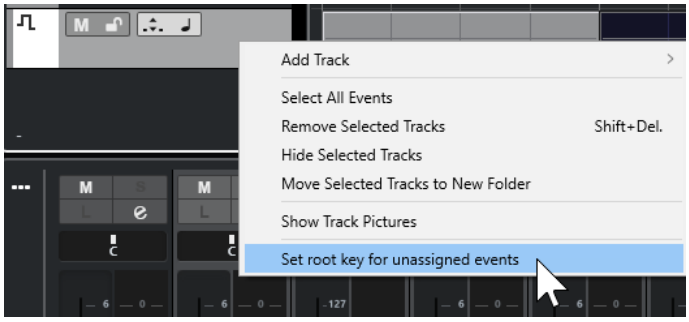
2. Optional: Select the drum and percussion loops in your project, and set the **Global Transpose** setting on the info line to **Independent**.

   This setting excludes the loops from being transposed.

3. Select **Project** > **Add Track** > **Transpose**.

   The transpose track is added to the track list. You can only have one transpose track in a project.

4. In the track list, right-click the transpose track, and select **Set root key for unassigned events** from the context menu.



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 336

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

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 the root key.

   All parts and events are transposed in order to match the root key.

3. Record your music.

RESULT

All recorded audio events and MIDI parts receive 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 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

1. Select **Media** > **Open Pool Window.**
2. 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.

TIP

- 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.

- 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.
- If you want to make 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**.

   The transpose track is added to the track list. 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 336

Muting Events on the Transpose Track

You can mute transpose events on 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**.

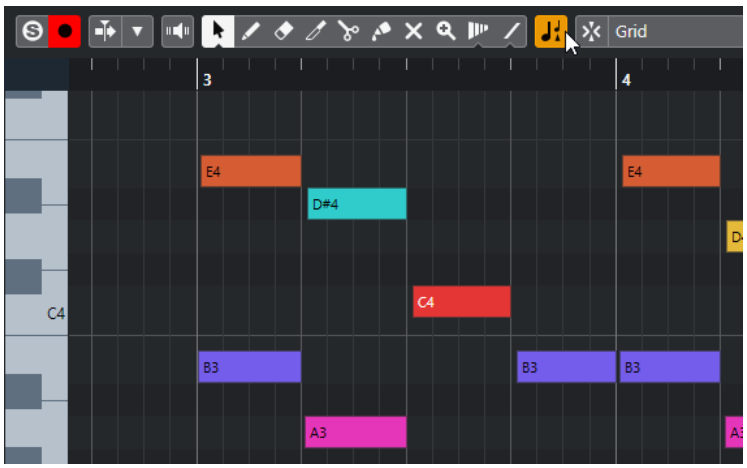
You have added a transpose track and activated **Transpose in Octave Range**.

If you add a transpose event with a value of 8 semitones or higher, the chord is transposed to the nearest interval or pitch.

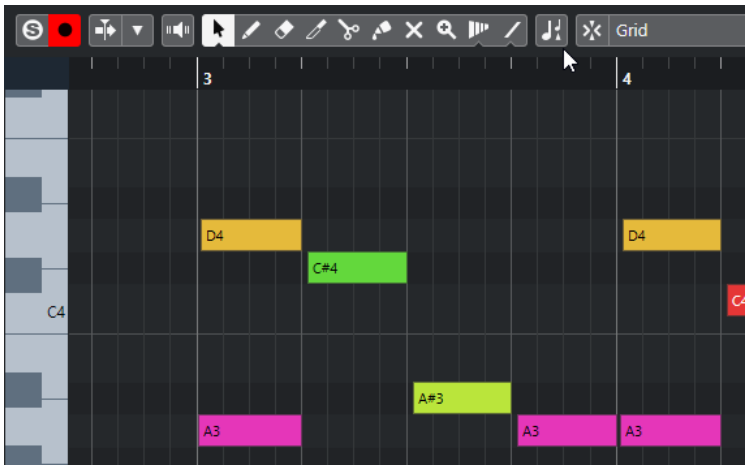
Indicate Transpositions

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 **Indicate Transpositions** for a MIDI part, open the part in the **Key Editor**, and click **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.

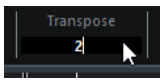
If your project does not contain a transpose track or if no transpose events are added, the following happens:

- **Global Transpose** is automatically set to **Follow** for the recorded parts or events.
- The recorded parts or events receive 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 334

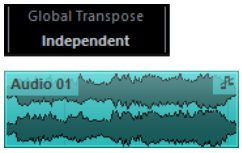
Excluding Individual Parts or Events from Global Transpose

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** carry 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.

Vertical marker lines are shown in the **Project** window to indicate marker positions on all tracks throughout the entire project.

NOTE

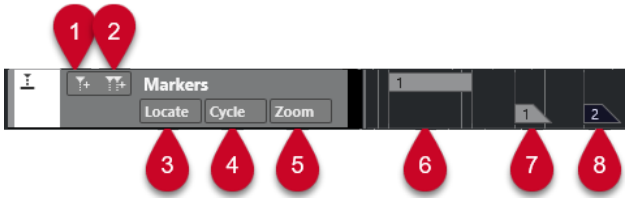
- Marker lines are shown behind other events on other tracks. If you need a more pronounced indication of the lines, consider lowering the **Event Opacity** in the **Preferences** dialog (**Event Display** page).
- In the **Project** window, marker lines are only shown if the marker track is not hidden in the **Visibility** tab.

RELATED LINKS

Position Markers on page 338
Cycle Markers on page 338
Marker Track on page 337
Event Opacity on page 1135
Showing/Hiding Individual Tracks on page 60

Marker Track

A marker track is used for adding and editing markers.



1 **Add Position 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 **Cycle marker event (inactive)**

Shows an inactive cycle marker event.

7 **Position marker event (inactive)**

Shows an inactive marker event.

8 **Position marker event (active)**

Shows an active marker event.

Adding, Moving, and Removing the Marker Track

You can add, move, and remove 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.
- 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.

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 of 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 saving sections of a project.

By defining cycle markers for the intro, verse, and chorus of a song, for example, you can quickly navigate to the song sections and repeat the section by activating **Activate Cycle** on the **Transport** panel.

You can zoom in on a cycle marker, by holding **Alt/Opt**, and double-clicking the cycle marker.

RELATED LINKS
Setting the Locators Using Cycle Markers on page 344

Adding and Editing Markers on the Marker Track

Cubase offers several ways to add position and cycle markers to a marker track and to edit them.

NOTE

When editing markers on a marker track, snapping is taken into account.

- To add a position marker, press **Alt/Opt**, and click on the marker track.

  To add a position marker and instantly rename it, press **Shift**-**Alt**, and click on the marker track.
- To add a position marker at the project cursor position, click **Add Position Marker** in the track control area, or use a key command.
- To add a cycle marker, press **Ctrl/Cmd**, click and drag on the marker track.

  To add a cycle marker and instantly rename it, press **Shift**-**Ctrl/Cmd**, and drag on the marker track.
- To add a cycle marker to the locator range, click **Add Cycle Marker** in the track control area, or use a key command.

  To add and instantly rename a cycle marker to the locator range, use **Shift**-click **Add Cycle Marker**.
- To change the start/end position of a cycle marker, drag the start/end handle.

  Alternatively, you can edit the marker positions on the info line.
- 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 move a position marker, select it and drag it. To move a cycle marker to another position, drag its upper border.

  Alternatively, you can edit the marker positions on the info line.
- To delete a marker, select it, and press **Delete**, or use the **Erase** tool.

  To delete all markers on a track that are situated at a later timeline position, select the **Erase** tool, and **Alt/Opt**-click.

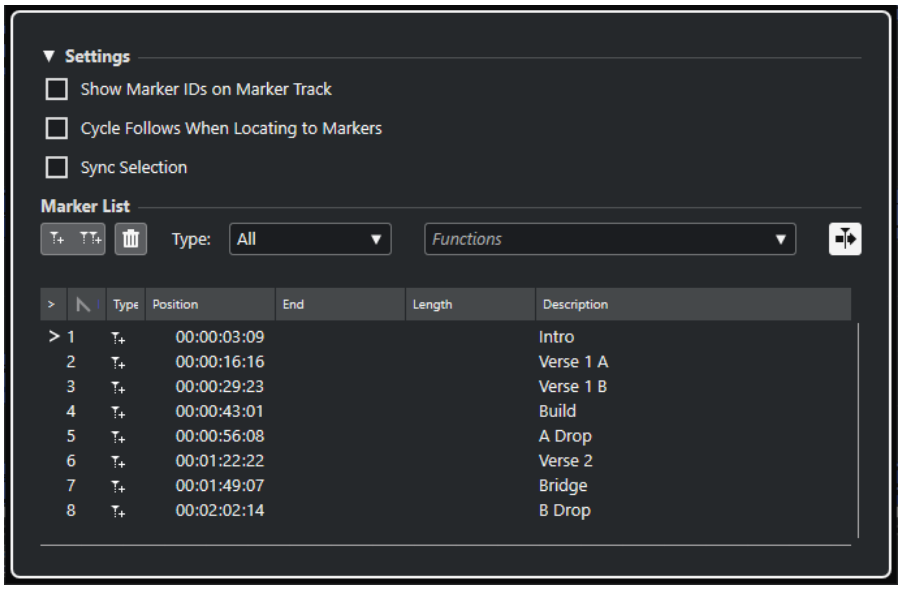
RELATED LINKS
Marker Track on page 337

Markers Window

In the **Markers** window, you can view and edit markers.

To open the **Markers** window, you have the following possibilities:

- Select **Project** > **Markers**.
- On the **Transport** panel in the marker section, click **Open Markers Window**.
- Use a key command (by default **Ctrl/Cmd**-**M**).



Settings Section

Show Marker IDs on Marker Track

If this option is activated, the marker IDs are shown on marker track events.

Cycle Follows When Locating to Markers

This automatically sets the left and right locators to a position or cycle marker when locating to this marker. This is useful if you need to set the locators on the fly during recording for Punch In/Punch Out, for example.

Sync Selection

If this option is activated, the selection in the **Markers** window is linked to the selection in the **Project** window.

NOTE

- **Sync Selection** is automatically deactivated when a recording is started and activated again after stopping the recording.

Marker List Section

Add Position Marker

Adds a position marker at the cursor position.

Add Cycle Marker

Adds a cycle marker at the cursor position.

Remove Marker

Removes the marker that is selected in the marker list.

Functions pop-up menu

Allows you to move selected markers on the project timeline and to reassign the marker IDs of all position or cycle markers in the marker list.

- **Move Markers to Cursor** moves position markers or start positions of cycle markers to the cursor position.
- **Reassign Position Marker IDs** reassigns the IDs for all position markers on the active marker track to match the order of markers on the track.

- **Reassign Cycle Marker IDs** reassigns the IDs for all cycle markers on the active marker track to match the order of markers on the track.

Auto-Scroll with Project Cursor

Allows you to keep track of the locate arrow, even if your project contains a high number of markers. If this option is activated, the **Markers** window is automatically scrolled to keep the locate arrow visible.

List of markers

Lists the markers of the selected track.

RELATED LINKS
Reassigning Marker IDs on page 343

Editing in the Markers Window

In the **Markers** window, you can select, edit, add, move, and remove markers. You can edit multiple markers at the same time.

- To select or edit a marker, click on it.

  To select multiple markers, **Shift**- or **Ctrl/Cmd**-click them.
- To add a position marker at the cursor position, click **Add Position Marker**.

  A position marker is added at the current project cursor position on the marker track.
- To add a cycle marker at the cursor position, click **Add Cycle Marker**.

  This adds a cycle marker between the left and right locators on the marker track.
- To move position markers or the start of cycle markers to the cursor position, select the markers. From the **Functions** pop-up menu, select **Move Markers to Cursor**. For cycle markers, this operation moves the end of the marker accordingly.

  NOTE

  Alternatively, you can enter the new position numerically in the **Position** column.
- To remove markers, select them, and click **Remove Marker**.

RELATED LINKS
Markers Window on page 339

Navigating in the Marker List

You can navigate in the marker list using your computer keyboard, and you can select entries by pressing **Return**. 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 **Home**/**End** keys.
- To move up/down a page in the list, 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

Regardless of what attributes you sort by, the second sort criterion will always be the position attribute.

Marker Attributes

Marker attributes are shown in the marker list of the **Markers** window.

- To open the **Markers** window, select **Project** > **Markers**.

The following attribute columns are available:

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

Shows the marker ID numbers.

Type

Indicates whether a marker is a position marker or a cycle marker.

Position

Allows you to view and edit the time positions for position markers and the start positions for cycle markers. This column cannot be hidden.

End

Allows you to view and edit the end positions of cycle markers.

Length

Allows you to view and edit the length of cycle markers.

Description

Allows you to view and edit marker descriptions.

RELATED LINKS
Marker IDs on page 343
Cycle Markers on page 338

Editing Attributes

You can edit marker attributes in the **Markers** window or on the info line.

To edit marker attributes in the **Markers** window, proceed as follows:

- To edit a marker attribute, select the corresponding marker, click in the desired attribute column, and make your changes.
- To change the attributes of several markers, select the markers, and activate the checkbox for the attribute.

  All selected markers 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**, and **Right Arrow** keys.

To edit a marker attribute on the info line, select the marker in the **Project** window, and click the corresponding attribute field on the info line.

NOTE

To choose which marker attributes are displayed on the info line, click **Set up Info Line** to the right of the info line.

RELATED LINKS
Info Line on page 51

Marker IDs

Each position or cycle marker on a marker track has its own marker ID.

When you add a position 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**.

You can change ID numbers at any time, which allows you to assign specific markers to key commands.

You can also automatically reassign the IDs for all position or cycle markers to match the order of markers on a track. To do so, select the corresponding function from the **Functions** pop-up menu.

RELATED LINKS
Reassigning Marker IDs on page 343

Reassigning Marker IDs

Sometimes, especially when setting markers on the fly, you may forget or miss to set a marker. When added later, the ID of this marker does 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. From the **Functions** pop-up menu, 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.

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.
  - Select a cycle marker from the **Cycle** pop-up menu in the track list.

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.

RELATED LINKS

Cycle Markers on page 338

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 at the 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 function or processing you perform now affects 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/Opt** 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

RELATED LINKS

Importing Markers via MIDI on page 345
Exporting Markers via MIDI on page 345

Importing Markers via MIDI

You can import position markers by importing MIDI files that contain 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.

- Activate **Import Markers** in the **Preferences** dialog (**MIDI—MIDI File** page).

The following settings are imported:

- The start position of position markers and cycle markers

RELATED LINKS
Importing MIDI Files on page 293

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

NOTE

To export markers via MIDI export, your project must contain a marker track.

RELATED LINKS
Exporting MIDI Tracks as Standard MIDI Files on page 158

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 **MixConsole** in the lower zone of the **Project** window 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 346
MixConsole Window on page 348

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 **MixConsole** in the lower zone of the **Project** window is a separate **MixConsole** that does not follow any visibility changes you perform in the **MixConsole** window.

To open a **MixConsole** in the lower zone of the **Project** window, do one of the following:

- Press **Alt/Opt** - **F3**.
- Select **Studio** > **MixConsole in Project Window**.

The **MixConsole** in the lower zone of the **Project** window is divided into the following sections:

1 **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.

2 **Toolbar**

The toolbar shows tools and shortcuts for settings and functions in the **MixConsole**.

3 **Fader section**

The fader section is always visible and shows all channels in the same order as in the track list.

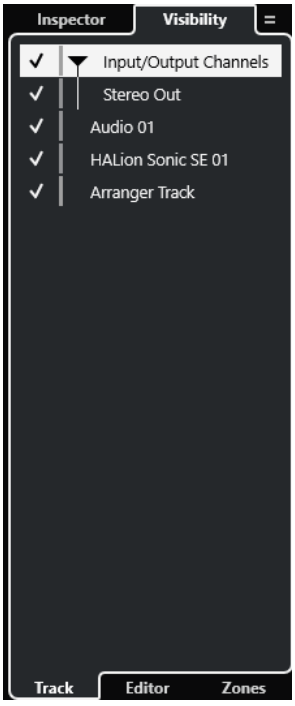
RELATED LINKS
Fader Section on page 364
Inserts on page 373
Sends on page 387
Filtering Channel Types on page 359
Undoing/Redoing MixConsole Parameter Changes on page 358
Linking Channels on page 361
Functions Menu on page 362

Showing/Hiding MixConsole Channels in the Lower Zone

To determine what channels are visible in the **MixConsole** in the lower zone of the **Project** window, use the **Visibility** tab 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. Click to the left of a track name to activate/deactivate the visibility of a channel.

RESULT

The track in the track list and the corresponding **MixConsole** channel are shown/hidden in the lower zone of the **Project** window.

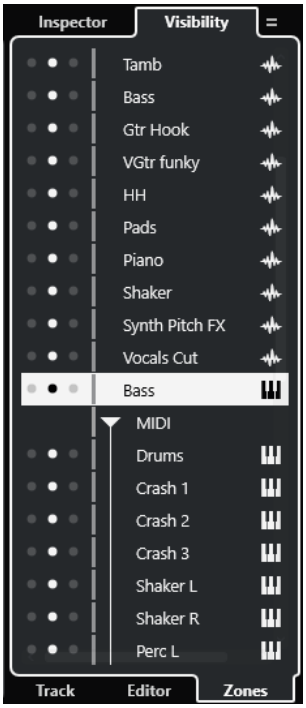
RELATED LINKS
Opening the Track Visibility on page 59
Track Visibility on page 58

Determining the MixConsole Channel Order in the Lower Zone

You can determine and lock the position of **MixConsole** channels in the lower zone of the **Project** window.

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, click the left dot next to the channel name.
   - To lock a channel on the right of the fader section, click the right dot next to the channel name.

RESULT

The channel is locked. Locked channels are always displayed.

RELATED LINKS
Opening the Project Window Zones Tab on page 61

MixConsole Window

You can open the **MixConsole** in a separate window.

To open the **MixConsole**, do one of the following:

- Press **F3**.

- Select **Studio** > **MixConsole**.
- On the **Project** window toolbar, click **Open MixConsole**.

NOTE

This is only visible on the toolbar if the **Media & MixConsole Windows** section is activated.

The **MixConsole** is divided into the following sections:

1 Toolbar

The toolbar shows tools and shortcuts for settings and functions in the **MixConsole**.

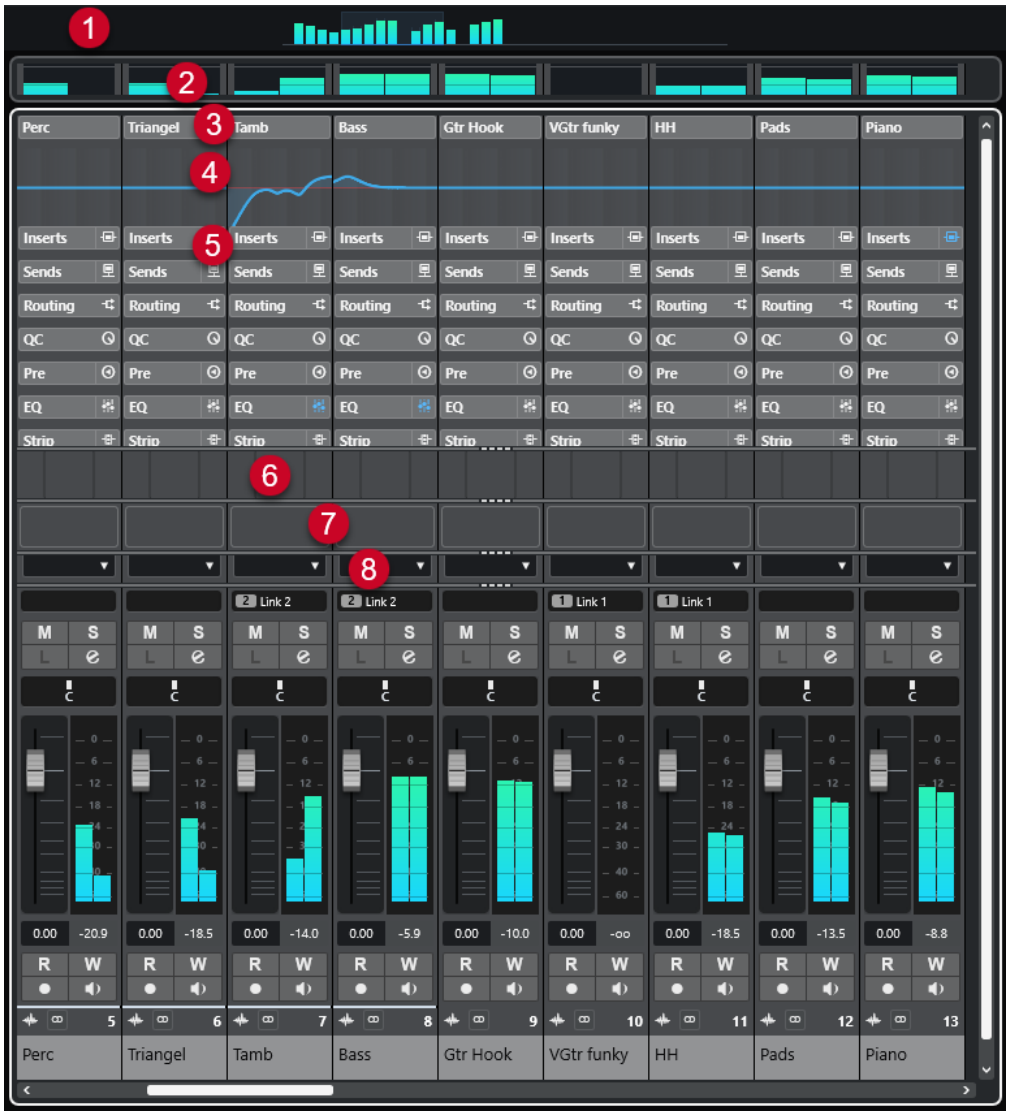
2 Left Zone

The left zone features the following tabs:

- The **Visibility** tab with the following tabs:
  - The **Channel** tab allows you to show/hide individual channels from the **MixConsole**.
  - The **Zones** tab allows you to determine and lock the position of certain **MixConsole** channels.
- The **History** tab lists all **MixConsole** parameter changes and allows you to undo/redo specific changes.

3 Fader section

The fader section is always visible and shows all channels in the same order as in the track list.



You can click **Set up Window Layout** on the **MixConsole** toolbar pane allows you to set up the following sections:

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.

3 **Channel Name**

Shows the name of the channel.

4 **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.

5 **Channel sections**

Allows you to show additional channel controls, as needed.

6 **Pictures**

Allows you to add a track picture to the selected channel. Pictures can help you identify your **MixConsole** channels quickly.

7 **Notepad**

Allows you to enter notes and comments about a channel. Each channel has its own notepad.

8 **Channel Latency**

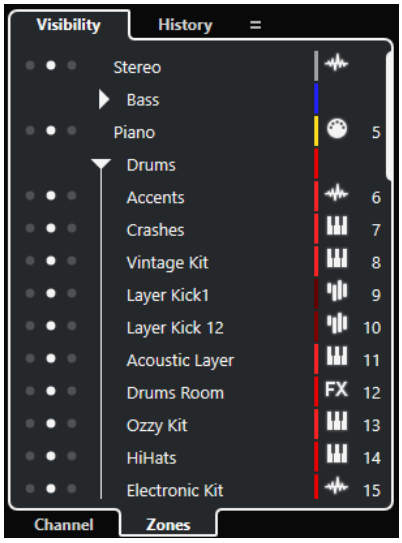
Allows you to show the latencies caused by insert effects or channel strip modules.

RELATED LINKS
MixConsole Left Zone on page 351
MixConsole Toolbar on page 354
Project Window Toolbar on page 38
Fader Section on page 364
Adding Pictures to MixConsole Channels on page 389
Adding Notes to a MixConsole Channel on page 390
Channel Latency Overview on page 391
Strip on page 378

MixConsole Left Zone

The left zone of the **MixConsole** shows several tabs that allow you to change the visibility and the position of specific channels or to undo parameter changes.

- To show/hide the left zone of the **MixConsole**, click **Show/Hide Left Zone** in the **MixConsole** window toolbar.



The following tabs are available at the top of the left zone:

Visibility

Lists all channels contained in your project and allows you to show/hide specific channels.

History

Lists all **MixConsole** parameter changes and allows you to undo/redo specific changes.

The following tabs are available at the bottom of the left zone:

Channel

Lists all channels contained in your project.

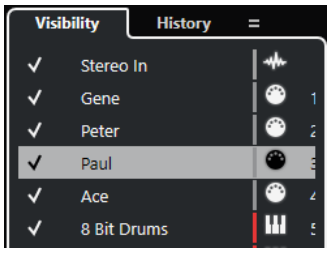
Zones

Allows you to lock the position of specific channels.

RELATED LINKS
Undoing/Redoing MixConsole Parameter Changes on page 358
MixConsole Toolbar on page 354

MixConsole Visibility

The **Visibility** tab in the **MixConsole** lists all channels contained in your project, and allows you to show/hide specific channels.



- To show/hide channels, check/uncheck them by clicking to the left of the channel name.
- To collapse/expand groups and folders, click the group or folder name.

NOTE

The **MixConsole** in the lower zone of the **Project** window does not follow any visibility changes that you perform in the **MixConsole** window and vice versa.

RELATED LINKS
Synchronizing Channel and Track Visibility on page 352

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 left zone of the **MixConsole**, open the **Visibility** tab.
2. Click **Sync Visibility of Project and MixConsole: On/Off**.
3. Select **Sync Project and MixConsole** to synchronize the channel visibility with the track visibility.

RESULT

The track and the channel visibility are synchronized.

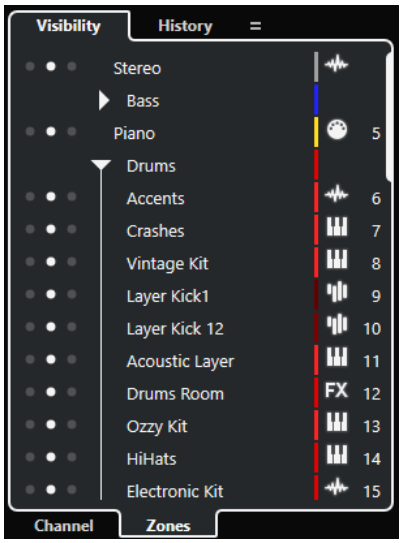
NOTE

Channels that are locked on the **Zones** tab are not synchronized.

RELATED LINKS
MixConsole Visibility on page 352
Synchronizing Track and Channel Visibility on page 61

MixConsole Zones

The **Zones** tab lists all channels contained in your project and allows you to lock the position of specific channels.



- To lock channels on the left/right of the fader section, click the left or the right dots next to the channel names.

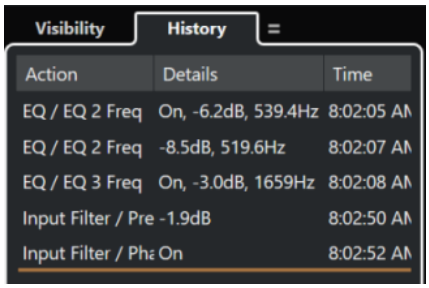
  Locked channels are excluded from scrolling. They are always visible.

NOTE

The **MixConsole** in the lower zone of the **Project** window does not follow any visibility changes that you perform in the **MixConsole** window and vice versa.

MixConsole History

The **History** tab lists all **MixConsole** parameter changes and allows you to undo/redo specific changes.



- To undo **MixConsole** parameter actions, click **Undo** on the **MixConsole** toolbar. You can also click the orange line in the history list, and drag it up.
- To redo **MixConsole** parameter actions, click **Redo** on the **MixConsole** toolbar. You can also click the orange line in the history list, and drag it down.

RELATED LINKS
Undoing/Redoing MixConsole Parameter Changes on page 358

MixConsole Toolbar

The toolbar contains tools and shortcuts for settings and functions in the **MixConsole**.

NOTE

The **MixConsole** toolbar in the lower zone of the **Project** window contains a limited set of tools compared to the toolbar of the **MixConsole** window.

MixConsole History

Undo/Redo

These buttons allow you to undo/redo **MixConsole** parameter changes.

Left Divider

Left Divider

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

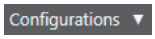
Search

Find Track/Channel

Opens a selector that lists all tracks/channels.

Channel Visibility Configuration

Channel Visibility Configurations



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

Set Channel Type Filter

Opens the channel filter that allows you to show/hide all channels of a certain channel type.

Locators

Go to Left Locator Position

Allows you to go to the left locator position.

Left Locator Position

Shows the left locator position.

Go to Right Locator Position

Allows you to go to the right locator position.

Right Locator Position

Shows the right locator position.

Locator Range Duration

Locators to Selection

Allows you to set the locators to the selection.

Locator Range Duration

Shows the duration of the locator range.

Transport Buttons

Go to Previous Marker/Zero

Moves the project cursor to the previous marker/zero position on the timeline.

Go to Next Marker/Project End

Moves the project cursor to the next marker/project end.

Rewind

Moves backward.

Forward

Moves forward.

Activate Cycle

Activates/Deactivates cycle mode.

Stop

Stops playback.

Start

Starts playback.

Transport Record

Activates/Deactivates record mode.

Time Displays

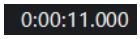
Primary Time Display

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

Select Primary Time Format

Allows you to select a time format for the primary time display.

Secondary Time Display



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

Select Secondary Time Format

Allows you to select a time format for the secondary time display.

Markers

Jump to Marker

Allows you to set and locate marker positions.

Open Markers Window

Opens the **Markers** window.

State Buttons

Deactivate All Mute States

Deactivates all mute states.

Deactivate All Solo States

Deactivates all solo states.

Activate/Deactivate Read for All Tracks

Activates/Deactivates read automation for all tracks.

Activate/Deactivate Write for All Tracks

Activates/Deactivates write automation for all tracks.

Suspend All Read/Write Automation

Suspends all read/write automation.

Bypass Inserts of All Visible Channels

Bypasses the inserts of all visible channels.

Bypass EQs of All Visible Channels

Bypasses the EQs of all visible channels.

Bypass Channel Strip of All Visible Channels

Bypasses the channel strip modules of all visible channels.

Bypass Sends of All Visible Channels

Bypasses the sends of all visible channels.

Link Group

Temporary Link Mode

Synchronizes all touched parameters of selected channels.

Zoom Palette

Reduce Channel Width

Allows you to reduce the channel width.

Set Number of Channels

Displays the set number of channels.

Increase Channel Width

Allows you to increase the channel width.

Reduce Section Height

Allows you to reduce the height of the sections.

Increase Section Height

Allows you to increase the height of the sections.

Audio Performance Meter

Audio Performance Meter

The upper bar displays either the current realtime peak or the ASIO-Guard load, depending on which of the two has the higher value. The lower bar shows the hard disk transfer load of the disk engine.

For a more detailed display of realtime peak and ASIO-Guard load, click to open the **Audio Performance** panel.

Right Divider

Right Divider

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

Mixer Functions Menu

Functions Menu

Opens a pop-up menu where you can select a **MixConsole** function.

Window Zone Controls

Show/Hide Left Zone

Shows/Hides the left zone of the window.

Set up Window Layout

Allows you to set up the window layout.

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 **Set Channel Type Filter** 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 **MixConsole** toolbar in the **MixConsole** window or in the lower zone of the **Project** window, click **Undo** or **Redo**.
- Press **Alt/Opt** - **Z** to undo **MixConsole** parameter changes or press **Alt/Opt** - **Shift** - **Z** to redo parameter changes.

The following **MixConsole** parameter changes can be undone/redone:

- Volume changes
- Panorama changes

- Changes on the **Routing** section
- Filter, gain, and phase changes in the **Pre** section
- Plug-in changes in the **Inserts** section
- EQ changes
- Changes on the **Channel Strip** section
- Changes on the **Sends** section

IMPORTANT

The **MixConsole** history is not saved with the project.

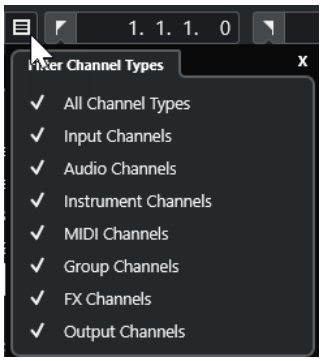
RELATED LINKS
MixConsole History on page 353
MixConsole Toolbar on page 354

Filtering Channel Types

The channel types filter on the **MixConsole** toolbar allows you to determine which channel types are shown.

PROCEDURE

1. Click **Set Channel Type Filter**.
   This opens the channel types filter.



2. Click to the left of a channel type to uncheck it and to hide all channels of that type.

RESULT

Channels of the filtered type are removed from the fader section, and the color of the **Set Channel Type Filter** button changes to indicate that a channel type is hidden.

Channel Visibility Configurations Menu

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 the menu. Channel visibility configurations are saved with the project.

Add Configuration

Opens the **Add Configuration** dialog that allows you to save the configuration and to 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 sections.

PROCEDURE

1. Set up the configuration that you want to save.
2. On the toolbar, click **Channel Visibility 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 left zone of the **MixConsole**, select the **Visibility** tab and right-click an empty area to open the context menu.

Channel Visibility Agents Menu

The **Channel Visibility Agents** pop-up menu contains options that allow you to show or hide all channels, selected channels, or channels with certain 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.

Undo Visibility Change

Undoes visibility changes.

Redo Visibility Change

Redoes visibility changes.

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**.

Linking Channels

You can link selected channels in the **MixConsole**. Any volume change that is applied to one channel is mirrored by all linked channels. **Q-Link** allows you to temporarily synchronize all touched parameters of selected channels.

Linking Selected Channels

You can link selected channels. This is useful, if you want to apply volume changes to all channels that are linked.

PROCEDURE

1. In the **MixConsole**, select the channels that you want to link.
2. Right-click one of the selected channels, and select **Link Selected Channels**.

RESULT

The selected channels are linked.

Using Quick Link

You can activate **Q-Link** 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/Opt** 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** on the **MixConsole** toolbar.

Scroll to Selected Channel

If this option is activated and you select a channel on 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 section height.

Section Settings

Allows you to make settings for the sections.

- **Fixed Number of Slots**

  Shows all available slots for the **Inserts**, **Sends**, **Cues**, and **Quick Controls** sections.

- **Link Sections to Configurations**

  If this option is activated, the section status is taken into account when you save and load a configuration.

NOTE

To show the selected section exclusively and collapse the other sections, right-click the section and activate **Expand Sections Exclusively**.

Open Audio Connections

Opens the **Audio Connections** window.

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.

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 channels or for selected channels only. Solo and mute buttons are deactivated, the volume fader is set to 0 dB, and pan is set to the center position.

RELATED LINKS
MixConsole Toolbar on page 354

Saving MixConsole Settings

You can save **MixConsole** settings for selected audio-related channels and load them into any project.

PROCEDURE

1. Select the channels with the settings that you want to save.
2. Select **Functions Menu** > **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 Menu** > **Load Selected Channels**.

3. In the **Load Selected Channels** dialog, select the `.vmx` 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 in conjunction with audio, instrument, MIDI, group, and FX channels.

NOTE

If a channel is deactivated on the **Visibility** tab or if its channel type is deactivated, it is not shown in the fader section. The **MixConsole** in the lower zone of the **Project** window 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:

- Set panorama
- Activate mute and solo
- Open channel settings
- Set volume
- Enable automation
- Set input levels

NOTE

All fader section functions and settings are also available in the **MixConsole** in the lower zone of the **Project** window.

RELATED LINKS
Channel Settings on page 392
Write/Read Automation on page 655

Pan Control

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.

- 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 95

Stereo Balance Panner

The stereo balance panner allows you to control the balance between the left and right channels. It is activated by default.

Pan Bypass

You can bypass the panning for all audio-related channels.

- To activate panning bypass, activate the bypass button to the left or press **Ctrl/Cmd** - **Alt/Opt** - **Shift** and click the pan control.
- To deactivate panning bypass, press **Ctrl/Cmd** - **Alt/Opt** - **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.

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** on the toolbar.

- 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/Opt**-click **Solo** or click and hold **Solo**.

  In **Solo Defeat** mode, the channel is not muted when you solo another channel. Click again to deactivate **Solo Defeat**.

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 to 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 Settings Menu

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 - Hold Peaks

If this option is activated, the highest registered levels are held and shown as static horizontal lines in the meter.

Meter Peak - 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 in the **Preferences** dialog (**Metering** page) 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

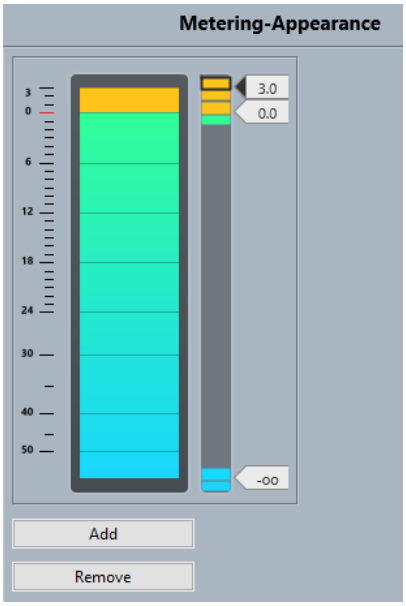
Resets the meters.

Setting up Meter Colors

Setting up meter colors can help you to keep an overview of what levels are being reached.

PROCEDURE

1. In the **Preferences** dialog, select **Metering** > **Appearance**.



2. Do one of the following to set the level position for a color change:
   - Double-click a level position to the right of the meter scale and enter the level (dB) value. To enter dB values smaller than zero, add a minus sign before the entered number.
   - Click a level position, and drag it to a specific level. Press **Shift** for more accurate positioning.
   - Click a level position, and nudge it up or down with the **Up Arrow**/**Down Arrow** keys. Press **Shift** for faster positioning.
3. Click the upper or lower part of a color handle so that a frame is shown. In the color picker, 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. Different colors indicate level changes even more precisely.

   NOTE

   - 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.
4. Click **OK**.

RELATED LINKS

Metering - Appearance on page 1145

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

In the **MixConsole**, you can set the input level. Make sure that the signal is loud enough but does not exceed 0 dB.

PROCEDURE

1. Select **Functions Menu** > **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 application program of the audio hardware 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 **Studio** > **Studio Setup**. In the **Devices** list, 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 Menu** > **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 **Inserts** section, click a slot and select an effect, or in the **Equalizer** section, make your 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/Opt** 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 A/D converters of the hardware.

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.

Channel Sections

Specific **MixConsole** functions, such as routing, insert, or sends, are organized in sections.

By default, all sections are expanded. To show the selected section exclusively and collapse the other sections, right-click the section and activate **Expand Sections Exclusively**.

NOTE

The **MixConsole** in the lower zone of the **Project** window features the **Inserts** and the **Sends** section only.

RELATED LINKS
Routing on page 370
Pre on page 371
Inserts on page 373
Equalizer on page 375
Strip on page 378
Sends on page 387
Track Quick Controls on page 388

Copying and Moving Section and Channel Settings

You can use drag and drop to copy or move section and channel settings.

NOTE

- The **Routing** section can only be copied, not moved via drag and drop.
- Copying the **Routing** section via drag and drop is not possible for input channels and output channels.

Drag and drop works between different channels or different section slots on the same channel. When you drag, a visual feedback indicates the sections where you can drop your settings.

The following applies:

- To move the section settings from one section to another, drag the section, and drop it on the section to which you want to move the settings.
- To copy the section settings from one section to another, press **Alt/Opt**, drag the section, and drop it on the section to which you want to copy 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.
- To copy the channel settings from one channel to another, including the output routing settings, press **Alt/Opt**, drag the channel, and drop it on the channel to which you want to copy the settings.

You can copy section 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.

Routing

The **Routing** section allows you to configure input and output routing, that is, to set up input and output busses.

NOTE

This channel section is exclusively 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 to receive the audio.

NOTE

The settings that you make for the input channel become 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.

Setting up Routing

You can set up the input and output busses in the **Routing** section of the **MixConsole**.

PREREQUISITE

You have set up busses and group channels in the **Audio Connections** window.

PROCEDURE

1. On the **MixConsole** toolbar, click **Set up Window Layout**, and activate **Routing** to show the **Routing** section above the fader section.
2. Click one of the slots of the **Routing** section 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/Opt**, and select a bus.

- To set several selected channels to incrementing busses (the second selected channel to the second bus, the third one 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.

Input Routing Configurations for Mono Channels

For mono channels, the following input routing configurations are available:

- Mono input busses or individual channels within a stereo input bus.
- Mono output busses, mono group output busses, or mono FX channel output busses.

  These should not lead to feedback.

RELATED LINKS
Routing on page 370

Input Routing Configurations for Stereo Channels

For stereo channels, the following input routing configurations are available:

- Mono or stereo input busses.
- 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 370

Output Busses

For output busses, any assignment is possible.

You can route the output of audio, instrument, group, and FX channels to output, group, FX channels, or use it as an effect side-chain source.

Routing the outputs from multiple audio channels to a group allows you to control the channel levels using one fader, and to apply the same effects and equalization to all the channels.

Pre

The **Pre** section for audio-related channels features a high-cut and a low-cut filter as well as gain and phase settings.

For MIDI channels, the **Pre** section allows you to open the **Input Transformer**.

NOTE

You cannot edit the **Pre** section settings in the EQ curve display.

RELATED LINKS
Track Input Transformer Window Overview on page 748
Equalizer Settings on page 376

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 **Set up Window Layout**, and activate **Pre** to show the **Pre** section 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** to the right of the high-cut filter to select a filter slope.
     You can choose 6, 12, 24, 36, or 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** to the right of the low-cut filter to select a filter slope.
     You can choose 6, 12, 24, 36, or 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. You can also use gain to boost the level of poorly recorded signals.

PROCEDURE

1. On the **MixConsole** toolbar, click **Set up Window Layout**, and activate **Pre** to show the **Pre** section 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 **Set up Window Layout**, and activate **Pre** to show the **Pre** section above the fader section.
2. Activate **Phase** to invert the phase polarity for the signal.

View Options for Pre

The view options allow you to choose how the **Pre** controls are shown in the corresponding section.

- To open the view options for **Pre**, right-click the **Pre** section header, and select **Show Pre as**.

The following options are available:

Combined Label & Setting

Shows a combination of the label and the setting.

Separate Label & Setting

Shows the label and the setting separately.

Combined Label & Setting (Compact)

Shows a combination of the label and the setting on one line.

NOTE

The view options only have an effect on audio channels.

Inserts

The **Inserts** section 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 document **Plug-in Reference**.

RELATED LINKS
Audio Effects on page 405

Adding Insert Effects

You can add insert effects to **MixConsole** channels.

PROCEDURE

1. On the **MixConsole** toolbar, click **Set up Window Layout**, and activate **Inserts** to show the **Inserts** section 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.

Changing the Number of Pre-Fader/Post-Fader Slots

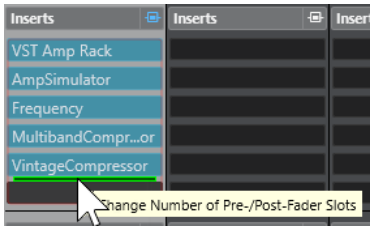
For each audio-related channel, you can add and specify the number of pre-fader and post-fader inserts.

PROCEDURE

- Do one of the following:
  - Right-click an insert effect in a pre-fader position. From the context menu, select **Set as last Pre-Fader Slot**.
  - Click and drag the separator for pre-/post-fader slots up or down.

RESULT

The number of pre-fader and post-fader slots is adjusted. The color and the separator line show which effect is pre-fader and which effect is post-fader.



Bypassing Insert Effects

You can bypass all insert effects.

- To bypass all inserts, activate **Inserts Bypass on/off** at the top of the **Inserts** section.
- To bypass a single insert, activate **Bypass Insert on/off** on the left of the inserts slot.
- To deactivate bypassing, deactivate **Bypass Insert on/off**.
- To activate/deactivate an insert, **Alt**-click **Bypass Insert on/off**.

Activating Side-Chaining for Inserts

Some of the inserts feature side-chain functionality.

PROCEDURE

1. Right-click an insert effect that supports side-chaining.
2. From the context menu, select **Activate/Deactivate Side-Chaining**.

Saving/Loading FX Chain Presets

You can save and load all insert section settings using FX chain presets. FX chain presets have the file name extension `.fxchainpreset`.

PROCEDURE

- Right-click the **Inserts** section header, 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 with EQ and channel strip settings from track presets. You can load, tag, and save FX chain presets in the **MediaBay**.

View Options for Inserts

The view options allow you to choose how to show the selected **Inserts** in the corresponding section.

- To open the view options for inserts, right-click the **Inserts** section header, and select **Show Inserts as**.

The following options are available:

Plug-in Names

Shows a combination of the plug-in names and the insert controls.

Plug-in Names & Insert Controls

Shows the plug-in names and the insert controls separately.

Equalizer

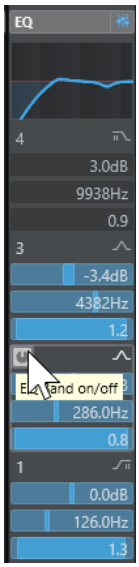
The **EQ** section is only available for audio-related channels. It features a built-in parametric equalizer with up to 4 bands for each audio channel.

Activating Equalizer Bands

In the **EQ** section, you can activate up to 4 EQ bands for each audio channel.

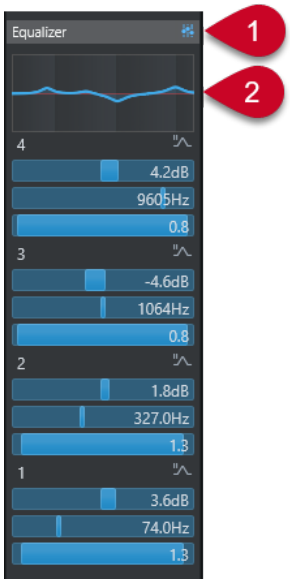
PROCEDURE

1. On the **MixConsole** toolbar, click **Set up Window Layout**, and activate **EQ** to show the **EQ** section above the fader section.
2. Click **EQ Band on/off** to activate an EQ band.



Equalizer Settings

You can make equalizer settings for the 4 bands. The bands 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 **Equalizers Bypass on/off**

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 **EQ** section of the track **Inspector**, in the **Project** window and in the **Channel Settings** window.

Clicking the curve display enlarges the view and 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 to add a curve point and activate the corresponding EQ band.
- Double-click the curve point to deactivate it.

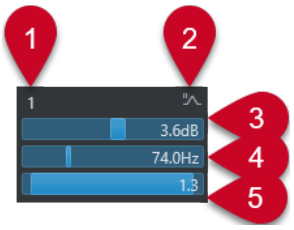
- Drag the curve point up or down to adjust the gain.
- Press **Ctrl/Cmd** to edit only the gain.
- Drag left or right to adjust the frequency.
- Press **Alt/Opt** to edit only the frequency.
- Press **Shift** while dragging to set the Q-factor.
- To invert the EQ curve, open the context menu, and select **Invert EQ Settings**.

The final curve shows the EQ settings as well as active high-cut and low-cut filters of the **Pre** section 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** section.

Band Settings



1 EQ Band on/off

Activates/Deactivates the equalizer band.

2 Select EQ Band 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. The range is ±24 dB.

4 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, A5 -23 or C4 +49.

NOTE

Enter a space between the note and the cent offset. Otherwise, the cent offsets are not taken into account.

5 Q-Factor

Determines the width of the affected frequency range. Higher values result in narrower frequency ranges.

RELATED LINKS
Making Filter Settings on page 372

Saving/Loading EQ Presets

You can save and load EQ presets.

PROCEDURE

- Right-click the **EQ** section header, 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 with insert and channel strip settings from track presets. You can load, tag, and save EQ presets in the **MediaBay**.

Strip

The **Strip** section is available for audio-related channels only. It allows you to load built-in processing modules for separate channels. You can change the position of specific modules in the signal flow via drag and drop.

Noise 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 prevent 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

Determines the level at which **Gate** is activated. Signal levels above the set threshold open the gate, and signal levels below the set threshold close the gate.

Range

Adjusts the attenuation of the gate when it is closed. The higher the value, the higher the level of the signal that passes through the closed gate.

Attack

Sets the time after which the gate opens when it is triggered.

Release

Sets the time after which the gate closes.

Listen Filter

Allows you to monitor the filtered signal.

Activate Filter

Activates/Deactivates the internal side-chain and allows you to set up a filter to modify the signal detection.

Auto Release

Automatically finds the best **Release** setting for the audio material.

Filter Frequency

If the internal side-chain is activated, this parameter sets the filter frequency for the signal detection.

Q-Factor

If the internal side-chain is activated, this parameter sets the resonance of the filter for the signal detection.

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).

Activate/Deactivate Side-Chaining

Activates/Deactivates the side-chain functionality.

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 **Standard Compressor**, **Tube Compressor**, or**VintageCompressor**.

Standard Compressor

The **Standard Compressor** allows you to create smooth compression effects. Drag the compressor up or down to change its position in the signal flow.

Threshold

Determines the level where the compressor kicks in. Only signal levels above the set threshold are processed.

Ratio

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.

Attack

Determines how fast the compressor responds to signals above the set threshold. The longer the attack time, the more of the early part of the signal passes through unprocessed.

Release

Sets the time it takes for the gain to return to its original level when the signal drops below the threshold.

AutoMakeUp

Automatically adjusts the output for gain loss.

Auto Release

Automatically finds the best **Release** setting for the audio material.

MakeUp Gain

Compensates for output gain loss caused by compression.

Gain Reduction LED

Indicates the level of compression of the signal.

Activate/Deactivate Side-Chaining

Activates/Deactivates the side-chain functionality.

RELATED LINKS
Standard Compressor – Details View on page 397

Tube Compressor

The **Tube Compressor** with integrated tube-simulation allows you to achieve smooth and warm compression effects. The VU meter shows the level of gain reduction. This compressor features an internal side-chain section that lets you filter the trigger signal.

Input Gain

Determines the compression level. The higher the input gain, the more compression is applied.

Output Gain

Sets the output gain.

Gain Reduction LED

Indicates the level of compression of the signal.

Attack

Determines how fast the compressor responds. The longer the attack time, the more of the early part of the signal passes through unprocessed.

Release

Sets the time it takes for the gain to return to its original level.

Auto Release

Automatically finds the best **Release** setting for the audio material.

Drive

Controls the amount of tube saturation.

Mix

Sets the level balance between the dry signal and the wet signal.

Activate/Deactivate Side-Chaining

Activates/Deactivates the side-chain functionality.

RELATED LINKS
Tube Compressor – Details View on page 398

VintageCompressor

The **VintageCompressor** is modeled after vintage compressors.

Input Gain

In combination with the **Output Gain** setting, this parameter determines the compression level. The higher the input gain setting and the lower the output gain setting, the more compression is applied.

Output Gain

Sets the output gain.

Attack

Determines the response time of the compressor. The longer the attack time, the more of the early part of the signal passes through unprocessed.

Release

Sets the time it takes for the gain to return to its original level.

Attack Mode (Punch)

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.

Auto Release

Automatically finds the best **Release** setting for the audio material.

Gain Reduction LED

Indicates the level of compression of the signal.

Activate/Deactivate Side-Chaining

Activates/Deactivates the side-chain functionality.

RELATED LINKS
VintageCompressor - Details View on page 398

EQ

You can make equalizer settings for each of the 4 bands. They 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 **EQ Band on/off**

Activates/Deactivates the equalizer band.

2 **Select EQ Band Type**

Opens a pop-up menu, where you can select an EQ type for the band. Bands 1 and 4 can act as parametric, shelf, or high/low-cut filters. EQ bands 2 and 3 are always parametric filters.

3 **Gain**

Sets the amount of cut or boost. The range is ±24 dB.

4 **Q-Factor**

Determines the width of the affected frequency range. Higher values result in narrower frequency ranges.

5 **Frequency**

Sets the center frequency of the frequency range to be cut or boosted.

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 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.

Threshold

Sets a threshold for the incoming signal level above which the plug-in starts to reduce the sibilants.

Reduction

Controls the intensity of the de-essing effect.

Auto Threshold

Automatically and continually chooses an optimum threshold setting, independent of the input signal. The **Auto Threshold** option does not work for low-level signals (<-30 dB peak level). To reduce the sibilants in such a signal, set the threshold manually.

Release

Sets the time it takes for the de-essing effect to return to zero when the signal drops below the threshold.

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.

Low-Frequency

Allows you to set the low frequency band.

High-Frequency

Allows you to set the high frequency band.

Gain Reduction LED

Indicates the level of compression of the signal.

Activate/Deactivate Side-Chaining

Activates/Deactivates the side-chain functionality.

EnvelopeShaper

This channel strip module can be used to attenuate or boost the gain of the attack and the release phases of audio material. You can use the knobs to change parameter values. Be careful with levels when boosting the gain. If needed, reduce the output level to avoid clipping.

Attack

Changes the gain of the attack phase of the signal.

Release

Changes the gain of the release phase of the signal.

Attack Length

Determines the length of the attack phase.

Output Gain

Sets the output level.

Activate/Deactivate Side-Chaining

Activates/Deactivates the side-chain functionality.

Sat

Allows you to add warmth to the sound. Open the pop-up menu to choose 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.

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.

HF-Adjust

Sets the amount of high frequency content of the saturated signal.

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 this parameter to values below 10 kHz.

HF-Adjust On/Off

Activates/Deactivates the **HF-Adjust** filter.

Solo

Allows you to hear just the set frequency range, including the tape simulation effect. This helps you to determine the appropriate frequency range.

Output

Allows you to adjust the output level.

Saturation Amount LED

Indicates the amount of saturation of the signal.

Tape Saturation

This channel strip module simulates the saturation and compression of recording on analog tape machines.

Drive

Controls the amount of tape saturation.

Low Filter

A low shelving filter with fixed frequency.

High Filter

A high-cut filter. Use the frequency fader to reduce the harshness of the output signal.

Dual

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.

Tube Saturation

This channel strip module simulates the saturation and compression of recording of analogue tube compressors.

Drive

Controls the amount of tube saturation.

Low Filter

A low shelving filter with fixed frequency.

High Filter

A high-cut filter. Use the frequency fader to reduce harshness.

Output Gain

Sets the output gain.

Drive Amount LED

Indicates the amount of drive of the signal.

Limit

Allows you to prevent clipping, even at high levels. Open the pop-up menu to choose 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 even reduce short audio level peaks without creating audible artifacts. However, this channel strip module creates a latency of 1 ms.

Threshold

Determines the level where the limiter kicks in. Only signal levels above the set threshold are processed.

Release

Sets the time it takes for the gain to return to the original level when the signal drops below the threshold.

Auto Release

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.

Mix Amount

Sets the level balance between the dry signal and the wet signal.

Output

Determines the maximum output level. Set this to 0 dB to avoid clipping.

Gain Reduction LED

Displays the amount of gain reduction.

Standard Limiter

This channel strip module ensures that the output level does not exceed a set output level, to prevent clipping in subsequent devices. **Standard Limiter** can adjust and optimize the **Release** parameter automatically, according to the audio material, or it can be set manually.

Input

Adjusts the input gain.

Release

Sets the time it takes for the gain to return to its original level. If **Auto Release** is activated, **Standard Limiter** automatically finds the best **Release** setting for the audio material.

Output

Determines the maximum output level.

Gain Reduction LED

Displays the amount of gain reduction.

Saving/Loading Strip Presets

You can save and load strip presets. Strip presets have the file name extension `.strippreset`.

PROCEDURE

- Right-click the **Channel Strip** section header, 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 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 649

View Options for Strip Modules

The view options allow you to choose how to show the **Strip** modules in the corresponding section.

- To open the view options for the **Strip** section, right-click the section header, and select **Show Strip Modules as**.

The following options are available:

Pop-up Modules

Shows the strip modules and their controls in a pop-up pane.

Strip Modules

Shows the strip modules and their controls in the strip section.

Strip Modules (Exclusive)

Shows only the selected strip module and its controls in the strip section.

NOTE

The view options only have an effect on audio channels.

Sends

The **Sends** section for audio-related channels offers send effect slots. These slots allow you to load send effects and value sliders for determining the send level for a channel. For MIDI channels, the **Sends** section features send effect slots that allow you to load send effects.

You can use sends to route audio, instrument, group, and FX channels to output, group, FX channels, or as effect side-chain sources.

Adding Send Effects

In the **Sends** section, you can add send effects.

PROCEDURE

1. On the **MixConsole** toolbar, click **Set up Window Layout**, and activate **Sends** to show the section 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

You can bypass all send effects.

- To bypass all sends, activate **Sends Bypass on/off** at the top of the **Sends** section.
- To deactivate bypassing, deactivate **Sends Bypass on/off**.

Adding FX Channels to a Send Effect

You can add an FX channel track that is routed to a send effect from within the **MixConsole**.

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 **OK**.

RESULT

The FX channel track is added to the **Project** window, and the send is automatically routed to it.

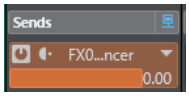
View Options for Send Effects

The view options allow you to choose how to show the selected **Sends** in the corresponding section.

- To open the view options for sends, right-click the **Sends** section header, and select **Show Sends as**.

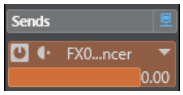
The following options are available:

Send Destination & Gain



Shows the destination and the gain control separately.

Send Destination, Gain & Send Controls



Shows a combination of the destination, the gain control, and the send controls.

Send Destination & Gain (Compact)

Shows a combination of the destination and the gain control in one line.

Track Quick Controls

The **QC** section gives you instant access to 32 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

The **QC** section is available in the **MixConsole** window only.

Adding Track Quick Controls in the MixConsole

You can add **Quick Controls** in the **MixConsole**.

PROCEDURE

1. On the **MixConsole** toolbar, click **Set up Window Layout**, and activate **QC** to show the section above the fader section.
2. Click one of the slots to open a selector.
3. Select a parameter from the list.

RESULT

The selected parameter is loaded and automatically activated as a **Quick Control**.

RELATED LINKS

Parameter Assignment on page 689

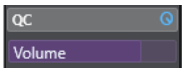
View Options for Track Quick Controls

The view options allow you to choose how to show the selected **Quick Controls** in the corresponding section.

- To open the view options for quick controls, right-click the **QC** section header, and select **Show Quick Controls as**.

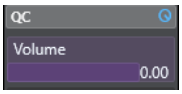
The following options are available:

Combined Destination & Value



Shows a combination of the destination and the value.

Separate Destination & Value



Shows the destination and the value separately.

Adding Pictures to MixConsole Channels

You can add track pictures to one or multiple channels in the **MixConsole**.

PROCEDURE

1. On the **MixConsole** toolbar, click **Set up Window Layout**, and activate **Pictures**.
2. Do one of the following:
   - To add a picture to a channel, select the channel, and double-click the pictures section.
   - To add the same picture to multiple channels, select multiple channels, hold **Shift**, and double-click the pictures section.
3. In the **Track Pictures Browser**, select a picture.
4. Click **OK**.

RESULT

The picture is shown in the track list and in the **MixConsole** pictures section.

RELATED LINKS
Track Pictures Browser on page 162
Showing Track Pictures on page 162

Adding Notes to a MixConsole Channel

You can add annotations to **MixConsole** channels.

PROCEDURE

1. On the **MixConsole** toolbar, click **Set up Window Layout**, 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 enter your notes.
3. To close the **Notepad**, press **Esc**, or click in another section of the **MixConsole**.

Applying Channel Colors to Channel Controls

You can apply channel colors to the channel controls. This is useful if you have many channels in the **MixConsole** and you want to identify them by their color.

PREREQUISITE

You have manually or automatically assigned track/channel colors.

PROCEDURE

1. Select **Edit** > **Preferences**.
2. Open the **User Interface** page, and select **Track & MixConsole Channel Colors**.
3. In the **Colorize Tracks and MixConsole Channels** section, activate **MixConsole Channels**.
4. Optional: To adjust the brightness of a selected channel, adjust the **Selection Brightness** slider.

   NOTE

   By default, the selected channel is shown in gray. If you want to display the selected channel in color, activate **Show Color for Selected Channel**. You can then discern it from the other channels by its pronounced color strength.
5. Click **OK**.

RESULT

The channel colors are applied to the channel controls.

RELATED LINKS
Automatically Assigning Colors to New Tracks/Channels on page 161
Colorizing Single Tracks on page 88
Colorizing Selected Tracks on page 87
User Interface on page 1148
User Interface - Track & MixConsole Channel Colors on page 1149

Channel Latency Overview

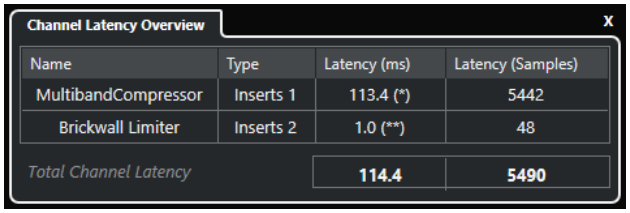
The **Channel Latency Overview** displays the latencies caused by insert effects, channel strip modules, or panners for audio-related channels in the **MixConsole**.

- Click **Set up Window Layout** on the **MixConsole** toolbar, and activate **Channel Latency** to show channel latencies in the fader section, then click **Open Channel Latency Overview** to open an overview of the latencies for a specific channel.

NOTE

The **Channel Latency Overview** is only available if latencies are present.

The **Channel Latency Overview** shows the following information:



Name

The name of the plug-in that causes the latency.

Type

Indicates if the latency is caused by an insert effect, a channel strip module, or a panner.

Latency (ms)

Shows the latency in milliseconds.

NOTE

- If the latency value is marked with **(*)**, the corresponding plug-in features a **Live** button or a low latency mode. If you activate **Constrain Delay Compensation**, this mode is automatically activated.
- If the latency value is marked with **(**)**, the corresponding plug-in does not feature a **Live** button or a low latency mode. If you activate **Constrain Delay Compensation** and the plug-in latency is higher than the **Constrain Delay Compensation** threshold, this plug-in is automatically deactivated.

NOTE

If you want any plug-in delay to be compensated during playback, make sure that **Constrain Delay Compensation** is deactivated.

Latency (Samples)

Shows the latency in samples.

Total Channel Latency

Shows the total latency for that channel in milliseconds and in samples.

RELATED LINKS
Plug-In Delay Compensation on page 407
Functions Menu on page 362
Constrain Delay Compensation on page 677
MixConsole Window on page 348
VST on page 1149

Channel Settings

You can open each **MixConsole** channel in a separate **Channel Settings** window. This allows for a better overview and easy editing of individual channels and their settings.

The channel selection in the **Channel Settings** window is synchronized with the channel selection in the **MixConsole** and the track selection in the **Project** window.

NOTE

To separate the channel selection in the **Channel Settings** window from the channel selection in the **MixConsole**, open the **Functions Menu** on the toolbar of the **Channel Settings** window, and deactivate **Follow 'e' buttons or selection changes**.

To separate the channel selection in the **Channel Settings** window from the track selection in the **Project** window, deactivate **Sync Selection in Project Window and MixConsole** in the **Preferences** dialog (**Editing—Project & MixConsole** page).

To open the channel settings for an audio-related channel, do one of the following:

- In the fader section of the **MixConsole**, select the channel, and click **Edit Channel Settings**.
- In the track list, select the track, and, in the top section of the **Inspector**, click **Edit Channel Settings**.
- In the track list, select the track, and, on the track, click **Edit Channel Settings**.

The **Channel Settings** window is divided into several sections:

1 Toolbar

The toolbar shows tools and shortcuts for settings and functions in the **Channel Settings** window.

2 **Inserts/Strip**

The **Inserts** section features insert effect slots that allow you to load insert effects for a channel.

The **Strip** section allows you to load built-in processing modules for separate channels.

3 **Channel Strip/Equalizer**

The **Channel Strip** section allows you to load built-in processing modules for separate channels.

The **Equalizer** section features a built-in parametric equalizer with up to 4 bands for each audio channel.

4 **Sends**

The **Sends** section features send effect slots that allow you to load send effects.

5 **Fader**

The fader section shows the current channel.

6 **Output Chain**

The output chain allows you to keep track of more complicated output routings.

The sections are arranged in zones at the left and right of the **Channel Settings** window.

RELATED LINKS
Channel Settings – Channel Inserts on page 395
Channel Settings – Channel Strip on page 396
Channel Settings – Equalizer on page 401
Channel Settings – Channel Sends on page 402
Channel Settings – Channel Faders on page 403
Equalizer Settings on page 376

Channel Settings Toolbar

The toolbar in the **Channel Settings** window contains tools and shortcuts for settings and functions in the **Channel Settings** window.

Channel Navigation

Go to Last Edited Channel

Shows the channel that you last edited in the **Channel Settings** window. This is only available if you have edited at least 2 channels.

Go to Next Edited Channel

Shows the next channel in the **Channel Settings** window. This is only available if you have edited at least 2 channels.

Go to Previous MixConsole Channel

Shows the previous **MixConsole** channel in the **Channel Settings** window.

Go to Next MixConsole Channel

Shows the next **MixConsole** channel in the **Channel Settings** window.

Search Channels

Allows you to search for specific channels and to display them in the **Channel Settings** window.

Left Divider

Left Divider

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

Channel Sources

Input

Opens the name of the input channel.

Go to Input/Select an Input

Shows the input channel in the **Channel Settings** window.

Channel Name

Channel Name

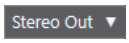
Shows the name of the channel that is shown in the **Channel Settings** window.

Channel Destinations

Go to Output/Select an Output

Opens the output channel in the **Channel Settings** window.

Output



Shows the name of the output channel.

Edit Instrument

Edit VST Instrument

Allows you to open the VST instrument control panel. This is available for MIDI and instrument channels only.

Output Chain

Show Output Chain

Shows the output chain. This allows you to keep track of more complicated output routings.

Track Templates

Load/Save Track Preset

Allows you to load/save track presets.

Reload Track Preset

Allows you to reload track presets.

Channel Functions

Functions Menu

Opens a pop-up menu where you can select a **Channel Settings** function.

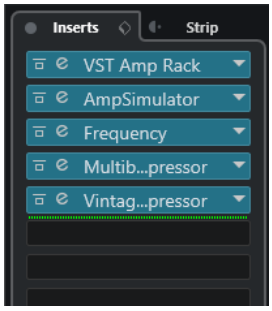
Window Zone Controls

Set up Window Layout

Allows you to set up the window layout.

Channel Settings – Channel Inserts

The **Channel Inserts** section is shown in the **Channel Settings** window.



Inserts Bypass on/off

Bypasses the insert effects for the channel.

Inserts

Allows you to add insert effects for the channel.

Preset Management

Allows you to load or save FX Chain presets.

Move Channel Strip to Pre/Post-Inserts Position

Allows you to move the channel strip to a pre-fader position or to a post-fader position in the signal flow.

Strip

Allows you to activate and set up channel strip modules for the channel.

Routing

Allows you to set up the routing for insert effects.

RELATED LINKS
Channel Settings on page 392

Channel Settings – Channel Strip

The **Channel Strip/Equalizer** section is shown in the **Channel Settings** window.

Channel Strip Bypass on/off

Bypasses the channel strip modules for the channel.

NOTE

You can reset the channel strip modules for the channel by **Alt/Opt**-clicking this button.

Channel Strip

Allows you to activate and set up channel strip modules for the channel.

Preset Management

Allows you to load or save strip presets.

Channel Strip Modules

The following channel strip modules are shown:

- Noise Gate
- Compressor
- EQ
- Tools
- Sat
- Limit

You can change the position of channel strip modules in the signal chain by dragging.

RELATED LINKS
Noise Gate on page 378
Compressor on page 379
EQ on page 381
Tools on page 381
Sat on page 383
Limit on page 384
Channel Settings on page 392

Standard Compressor – Details View

The **Standard Compressor** features a details view with more controls and value readouts for the meters.

- To open the details view, click **Edit Module** .

In the details view, the following additional parameters are available:

- Soft Knee/High Ratio
- Hold
- Analysis
- Dry Mix
- Input Gain meter
- Output Gain meter
- Gain Reduction meter

You can close the details view by clicking **Close Module** .

RELATED LINKS
Standard Compressor on page 379

Tube Compressor – Details View

The **Tube Compressor** features a details view with more controls and value readouts for the meters.

- To open the details view, click **Edit Module** .

In the details view, the following additional parameters are available:

- Character
- Low/High switch for Ratio
- Side-chain section with Frequency, Filter Type, Q-Factor, and Monitor
- Input Gain meter
- Output Gain meter

You can close the details view by clicking **Close Module** .

RELATED LINKS
Tube Compressor on page 380

VintageCompressor - Details View

The **VintageCompressor** features a details view with more controls and value readouts for the meters.

- To open the details view, click **Edit Module** .

In the details view, the following additional parameters are available:

- Mix
- Ratio buttons
- Input Gain meter
- Output Gain meter
- Gain Reduction meter

You can close the details view by clicking **Close Module** .

RELATED LINKS
VintageCompressor on page 381

Maximizer – Details View

The **Maximizer** features a details view with more controls and value readouts for the meters.

- To open the details view, click **Edit Module** .

In the details view, the following additional parameters are available:

- Classic

  This mode is suited for all styles of music.
- Modern

  This mode is particularly suited for contemporary styles of music. **Release** allows you to set the overall release time, **Recover** allows for a faster signal recovering at the beginning of the release phase.
- Soft Clip

  Activate this to start limiting or clipping the signal softly and to generate harmonics that add a warm, tube-like characteristic to the audio material.
- High resolution input/output meter with gain reduction.

You can close the details view by clicking **Close Module** .

RELATED LINKS
Maximizer on page 384

Channel Settings – Equalizer

The **Channel Strip/Equalizer** section is shown in the **Channel Settings** window.

Equalizers Bypass on/off

Bypasses the equalizer settings for the channel.

NOTE

You can reset the equalizers by **Alt/Opt**-clicking this button.

Preset Management

Allows you to load or save equalizer presets.

Equalizer Settings

Opens the **Equalizer Settings** panel.

Equalizer display

Allows you to make equalizer settings for the 4 bands in a large EQ curve display with several modes.

Equalizer Controls

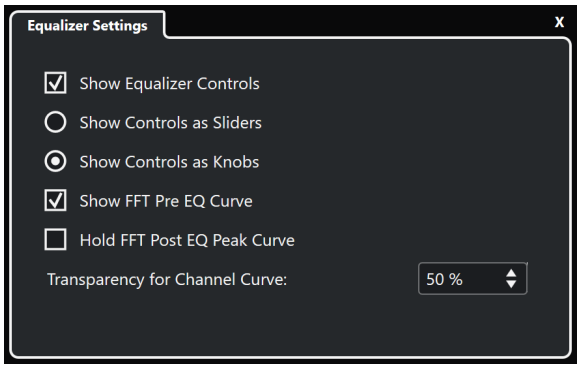
Allows you to make equalizer settings for the 4 bands in a large EQ curve display with several modes.

RELATED LINKS
Channel Settings on page 392

Equalizer Settings Panel

The **Equalizer Settings** panel allows you to set up the equalizer.

- To open the **Equalizer Settings** panel, click **Equalizer Settings** in the **Equalizer** section of the **Channel Settings** window.



Show Equalizer Controls

Shows/Hides the equalizer controls.

Show Controls as Sliders

Shows the equalizer controls as sliders.

Show Controls as Knobs

Shows the equalizer controls as knobs.

Show FFT Pre EQ Curve

Shows/Hides the FFT (Fast Fourier Transform) input curve for the reference channel.

Hold FFT Post EQ Peak Curve

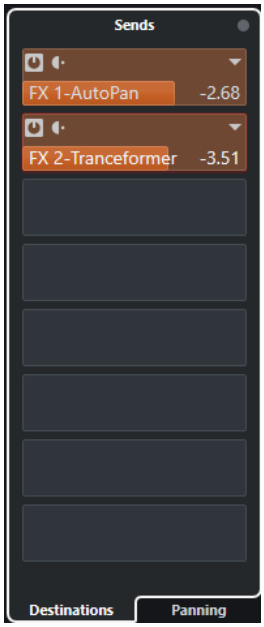
Holds the peak values of the FFT (Fast Fourier Transform) output curve for the reference channel.

Transparency for Channel Curve

Allows you to adjust the transparency of the filled area for the spectral curve.

Channel Settings – Channel Sends

The **Channel Sends** section is shown in the **Channel Settings** window.



Sends Bypass on/off

Bypasses the send effects for the channel.

Sends—Destinations

Allows you to set up a destination for the send effects of the channel.

Sends—Panning

Allows you to set up panning for the send effects.

RELATED LINKS
Channel Settings on page 392

Channel Settings – Channel Faders

The **Channel Faders** section is shown in the **Channel Settings** window.

The controls are the same as in the **MixConsole** fader section.

RELATED LINKS
Fader Section on page 364
Channel Settings on page 392

Keyboard Focus in the MixConsole

You can control the left zone, the channel section, and the fader section 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

To be able to control the **MixConsole** with the keyboard, you must activate the 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. The channel sections and the fader controls that are selected for keyboard control are indicated by a red border.

CHOICES

- To navigate through the controls, use the **Up Arrow**, **Down Arrow**, **Left Arrow**, or **Right Arrow** keys.
- To activate or deactivate a switch, press **Return**.
- To expand or collapse an active section, 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/Opt** - **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/Opt** - **Return**.

Audio Effects

Cubase comes with a number of included effect plug-ins that you can use to process audio, group, and instrument channels.

The effects and their parameters are described in the separate document **Plug-in Reference**.

Insert Effects and Send Effects

You can apply effects to audio channels by using insert effects or send effects.

Insert Effects

Insert effects are inserted into the signal chain of an audio channel. As a result, the whole channel signal passes through the effect.

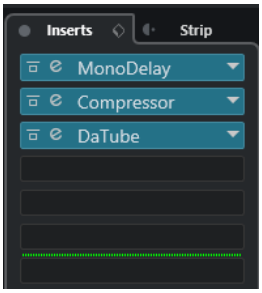
You can add up to 16 different insert effects per channel.

Use insert effects for effects such as distortion, filters, or other effects that change the tonal or dynamic characteristics of the sound.

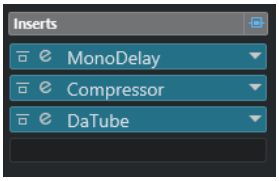
To add and edit insert effects, you can use the following inserts sections:

- The **Inserts** section in the **MixConsole**.

- The **Inserts** section in the **Channel Settings** window.



- The **Inserts** section in the **Inspector**.



- The **Inserts** section on the **Channel** tab.

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).

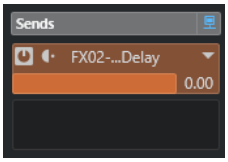
Use send effects in the following cases:

- To control the balance between the dry and the 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** section in the **MixConsole**.

-
- The **Sends** section in the **Inspector**.



- The **Sends** section on the **Channel** tab.

RELATED LINKS
Direct Offline Processing on page 435

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. VST 3 retains full backwards compatibility to VST 2.

Smart Plug-In Processing

Smart plug-in processing is a technology that serves 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, activate **Suspend VST 3 plug-in processing when no audio signals are received** in the **Preferences** dialog (**VST—Plug-ins** page).

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-Chaining on page 418

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 them. As a result, the output audio is 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 real-time recording. For details, see the separate document **Plug-in Reference**.

To avoid latency during real-time recording or real-time playback of VST instruments, you can also use **Constrain Delay Compensation**.

RELATED LINKS
Constrain Delay Compensation on page 677
MixConsole Window on page 348

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 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 16 different insert effects for each audio-related channel (audio track, group channel track, FX channel track, or instrument channel) or output bus.

The signal passes through the insert effects from top to bottom, according to their slot positions.

You can define post-fader insert slots for any channel. Post-fader insert slots are always post-EQ and post-fader.

NOTE

To show all post-fader slots in the **MixConsole**, open the **Functions Menu**, and in the **Section Settings** menu, activate **Fixed Number of Slots**.

Use post-fader slots for insert effects where you want the level to remain unchanged 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 an effect with identical settings on several channels, set up a group channel, and apply your effect as a single insert for this group.

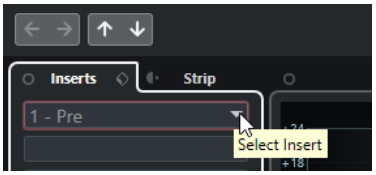
RELATED LINKS
Dither Effects on page 423
Changing the Number of Pre-Fader/Post-Fader Slots on page 374
Adding Insert Effects to Group Channels on page 409

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 423

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 **Studio** > **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. In the global track controls area of the track list, click **Add Track** .
2. Click **Group**.
3. Open the **Audio Outputs** pop-up menu, and select the desired output bus.
4. Click **Add Track**.

   The group track is added to the track list.
5. In the **Inspector** for the group track, open the **Inserts** section.
6. Click the first effect slot, and select an effect from the selector.
7. 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.

RELATED LINKS
Add Track Dialog – Group Channel on page 117

Adding Group Channels to Selected Channels

You can add a group channel to several selected channels.

PREREQUISITE

Your project contains some tracks that you want to route to a group channel.

PROCEDURE

1. In the track list, right-click the tracks that you want to route to a group channel, and select **Add Track** > **Group Channel to Selected Channels**.
2. In the **Add Track** dialog, open the **Configuration** pop-up menu, and select a channel configuration for the group channel track.
3. Open the **Folder Setup** pop-up menu, and select wether to create group channel tracks inside or outside a dedicated folder.
4. Click **OK**.

RESULT

The group channel track is added to the track list. In the **Output Routing** pop-up menu of the selected tracks, the group is selected. The tracks are routed to the group channel.

RELATED LINKS

Add Track Dialog – Group Channel on page 117

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 **Studio** > **MixConsole**.
2. In the **Inserts** section, locate the insert effect that you want to copy.
3. Hold down **Alt/Opt**, and drag the insert effect on an insert slot.

RESULT

The insert effect is copied. If the destination slot already contains an insert effect, the existing effect is moved down one slot.

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 **Studio** > **MixConsole**.
2. In the **Inserts** section, locate the insert effect that you want to rearrange.
3. Drag the insert effect to another 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

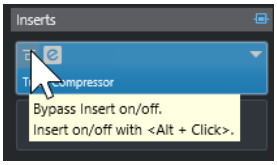
If you want to listen to a track without having it processed by an effect, but do not want to remove this effect completely from the insert slot, you can deactivate it.

PREREQUISITE

You have added an insert effect to an audio channel.

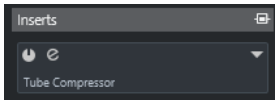
PROCEDURE

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/Opt**-click **Bypass Insert on/off**.



RESULT

The effect is deactivated, and all processing is terminated, but the effect is still loaded.



Bypassing Insert Effects

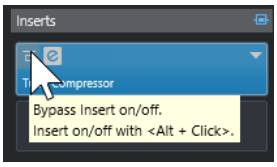
If you want to listen to the track without having it processed by a particular effect, but do not want to remove this effect completely from the insert slot, you can bypass it. A bypassed effect is still processing in the background. This allows for crackle-free comparison of the original with the processed signal.

PREREQUISITE

You have added an insert effect to an audio channel.

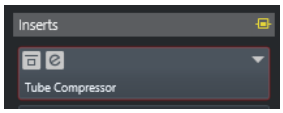
PROCEDURE

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 on/off**.



RESULT

The effect is bypassed but still processing in the background.



Removing Insert Effects

PROCEDURE

1. In the track list, select the audio track with the insert effect that you want to remove.
2. In the **Inspector**, open the **Inserts** section.
3. On the effect that you want to remove, click **Select Insert**.
4. 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 Channel**.

2. In the **Freeze Channel Options** dialog, specify a **Tail Size** in seconds.

   This adds time at the end of the rendered file. As a result, reverb and delay tails can fully fade out.

RESULT

- The output of the audio track is rendered to an audio file, and on playback you hear the same sound as before freezing.
- Less CPU load is used.
- The **Freeze Channel** button lights up.

- The track controls are grayed out.
- The audio events are locked.
- You can still adjust the level and panning, make EQ settings, and adjust the effect sends.

NOTE

The audio file is saved in the **Freeze** folder that can be found in the following location:

- Windows: within the **Project** folder
- macOS: **User/Documents**

AFTER COMPLETING THIS TASK

To unfreeze a frozen track, click **Freeze Channel** again.

RELATED LINKS

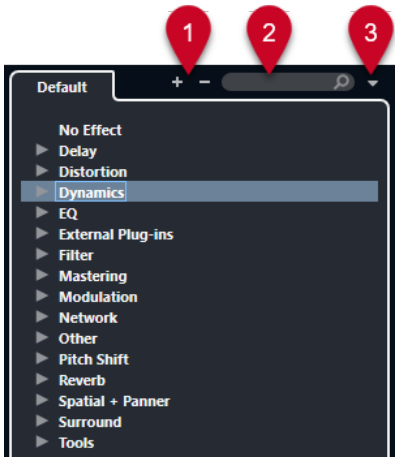
Freezing Multiple Tracks on page 166

VST Effect Selector

The VST effect selector allows you to select VST effects from the active collection.

- To open the VST effect selector, open the **Inserts** section of the audio track **Inspector**, and on an insert slot, click **Select Insert**.

The following controls are available:



1 **Expand Tree/Collapse Tree**

Expands/Collapses the tree.

2 **Search VST Effect**

Allows you to search for VST effects by typing in the name or parts of the name or the category.

3 **Plug-in Collections and Options**

Allows you to select a collection.

If you select the **Default** collection, the options **Sort By Category** and **Sort by Vendor** become available. These allow you to sort the default collection.

Send Effects

Send effects are outside the signal path of an audio channel. The audio data to be processed must be sent to the effect.

- You can select an FX channel track as the routing destination for a send.
- You can route different sends to different FX channels.
- You can control the amount of signals sent to the FX channel by adjusting the effect send level.

  NOTE

  In the **Preferences** dialog (**VST** page), you can set a default send level. Use **Ctrl/Cmd**-click to set the send level to this default value.

To do this, create FX channel tracks.

RELATED LINKS
FX Channel Tracks on page 414
VST on page 1149

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.

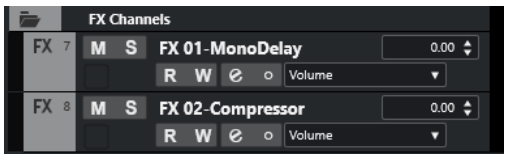
- You can add several insert effects to an FX channel.

  The signal passes through the effects in series, from the top downward.
- You can rename FX channel tracks, just like any other tracks.
- You can add automation tracks to FX channel tracks.

  This allows 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 choose wether to create FX channel tracks inside or outside a dedicated folder. If you select **Create Inside Folder**, FX channel tracks are shown in a dedicated folder.



This results in a better overview and facilitates editing the FX channel tracks.

NOTE

To save screen space, collapse the FX channel folders.

RELATED LINKS
Adding FX Channel Tracks on page 415

Adding FX Channel Tracks

PROCEDURE

1. In the global track controls area of the track list, click **Add Track** .
2. Click **Effect**.
3. Open the **Effect** pop-up menu, and select an effect for the FX channel track.
4. Open the **Configuration** pop-up menu, and select a channel configuration for the FX channel track.
5. Open the **Folder Setup** pop-up menu, and choose whether to create FX channel tracks inside or outside a dedicated folder.
6. Click **Add Track**.

RESULT

The FX channel track is added to the track list, and the selected effect is loaded into the first available insert effect slot of the FX channel.

RELATED LINKS

Add Track Dialog – Effect on page 118

Adding FX Channels to Send Slots

PROCEDURE

1. In the track list, select the tracks to which you want to add an FX channel.
2. In the **Inspector**, open the **Sends** section.
3. Right-click the send slot for the FX channel, and select **Add FX Channel to Send**.
4. Open the **Effect** pop-up menu, and select an effect for the FX channel track.
5. Open the **Configuration** pop-up menu, and select a channel configuration for the FX channel track.
6. Open the **Folder Setup** pop-up menu, and choose whether to create FX channel tracks inside or outside a dedicated folder.
7. Click **Add Track**.

RESULT

The FX channel track is added to the track send slot.

Adding FX Channels to Selected Channels

PREREQUISITE

Your project contains some tracks to which you want to add an FX channel.

PROCEDURE

1. In the track list, select all tracks to which you want to add an FX channel.
2. Right-click one of the tracks, and select **Add Track** > **FX Channel to Selected Channels**.
3. In the **Add Track** dialog, open the **Effect** pop-up menu, and select an effect for the FX channel track.

4. Open the **Configuration** pop-up menu, and select a channel configuration for the FX channel track.
5. Open the **Folder Setup** pop-up menu, and choose whether to create FX channel tracks inside or outside a dedicated folder.
6. Click **OK**.

RESULT

The FX channel track is added to the track list. The selected effect is loaded into the first available insert effect slot of the FX channel and to the first available send effect slot of all channels that you selected.

RELATED LINKS

Add Track Dialog – Effect on page 118

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

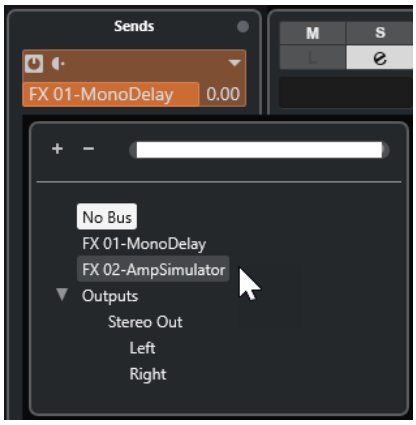
The selected effect is added to the FX channel track as an insert effect.

Routing Audio Channels to FX Channels

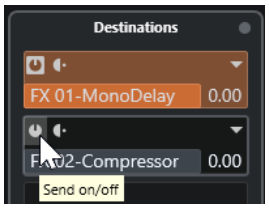
If you route an audio channel send to an FX channel, the audio is routed through the insert effects that you have set up for the FX channel.

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, click **Select Destination** for an effect slot, and select the FX channel track from the selector.



4. On the send slot, click **Send on/off**.



RESULT

The audio is routed through the FX channel.

AFTER COMPLETING THIS TASK

In the **Channel Settings** window for the audio channel, hold down **Alt/Opt** 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 415

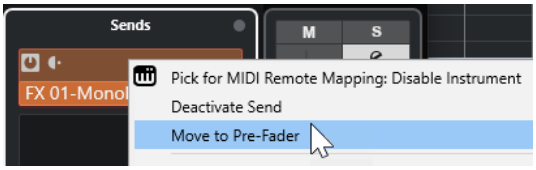
Pre/Post Fader Sends

You can choose whether to send the signal from the audio channel to the FX channel before or after the audio channel volume fader.

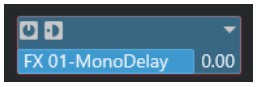
- Pre-fader sends

  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 a pre-fader position, open the **Channel Settings** window for the audio channel, right-click a send, and select **Move to Pre-Fader**.

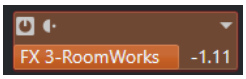
  

  The **Pre-/Post-Fader** button indicates that the send is in pre-fader position.

- 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

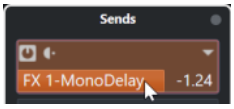
If you activate **Mute Pre-Send when Mute** in the **Preferences** dialog (**VST** page), sends in pre-fader mode are muted if you mute their channels.

Setting the 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, locate the effect slot and drag to the left or to the right to set the send level. **Ctrl/Cmd**-click to set the level to the default send level, as specified in the **Preferences** dialog (**VST** page).

   This determines how much of the signal is routed from the audio channel to the FX channel.

RESULT

The effect level is adjusted according to your settings.

NOTE

To determine how much of the signal is sent from the FX channel to the output bus, open the **Channel Settings** window for the FX channel track, and adjust the effect return level.

Side-Chaining

Many VST 3 effects support side-chaining. 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-chaining:

- Modulation
- Delay

- Filter

By activating side-chaining, you can do the following:

- 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 commonly 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 document **Plug-in Reference**.

NOTE

- Certain combinations of tracks and side-chain inputs may lead to feedback loops and additional 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.

RELATED LINKS
Side-Chain Routing on page 421
Triggering a Delay Effect with Side-Chain Signals on page 419
Triggering a Compressor with Side-Chain Signals on page 420
Creating Side-Chain Connections From Multiple Inputs on page 422

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.
5. On the effect control panel, make your effect settings, and click **Activate/Deactivate Side-Chaining**.

6. Click **Set up Side-Chain Routing**.
7. Click **Add Side-Chain Source**, and select the duplicate track from the selector.
8. Optional: Adjust the send level in the **Level** value field.
9. In the **Project** window, select the duplicate track.
10. In the **Inspector**, click **Output Routing**, and select the side-chain node for the **PingPongDelay** effect.

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 medium volume also silence the delay effect, you can adjust the volume of the duplicated track.

RELATED LINKS

Side-Chaining on page 418
Side-Chain Routing on page 421

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, for example, 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**.

4. On the effect control panel, make your effect settings, and click **Activate/Deactivate Side-Chaining**.
5. On the effect control panel, click **Set up Side-Chain Routing**.
6. Click **Add Side-Chain Source**, and select the bass drum track from the selector.
7. Optional: Adjust the send level in the **Level** value field.

RESULT

You have connected the bass drum track side-chain to the **Compressor** on the destination track. The bass drum signal triggers the **Compressor** on the bass guitar track. When you now play back the project, the bass guitar is compressed whenever the signals on the bass drum track exceed the set threshold.

RELATED LINKS

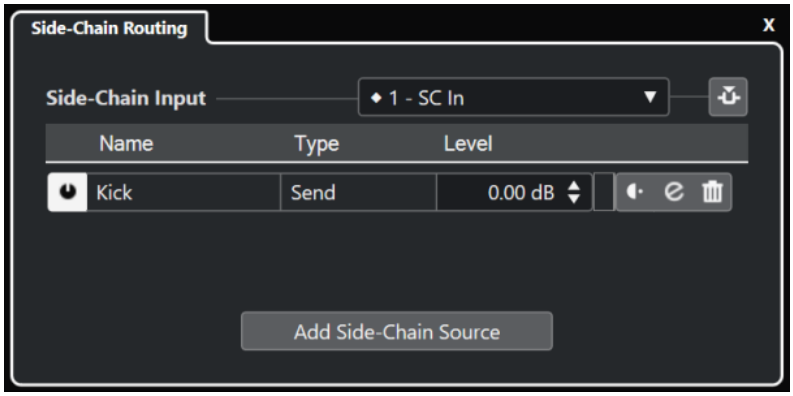
Side-Chaining on page 418
Side-Chain Routing on page 421

Side-Chain Routing

The **Side-Chain Routing** panel allows you to set up the side-chain routing for the selected plug-in.

- To open the **Side-Chain Routing** panel, click **Set up Side-Chain Routing** on the plug-in control panel.

The following controls are available:



Select the Plug-in Side-Chain Input

This pop-up menu is only available if your plug-in supports several side-chain inputs. From the pop-up menu, select the input for which you want to add a side-chain source. Side-chain plug-in inputs that are routed to side-chain sources are indicated by a rhombus next to the input name. The number of available side-chain inputs depends on the plug-in.

Activate/Deactivate Side-Chaining

Activates/Deactivates the side-chain functionality.

Activate/Deactivate Side-Chain Source

Enables/Disables the side-chain source.

Name

Shows the name of the side-chain source.

Type

Shows the type of the side-chain source.

Level

Allows you to adjust the send level.

Meter

Shows the volume level of the input track.

Pre-/Post-Fader

Allows you to set the insert to pre-fader position or to post-fader position.

Edit Channel Settings

Opens the **Channel Settings** window for the selected side-chain source.

Remove Side-Chain Source

Removes the side-chain source.

Add Side-Chain Source

Opens a selector that allows you to add a side-chain source.

RELATED LINKS

Side-Chaining on page 418
Creating Side-Chain Connections From Multiple Inputs on page 422

Creating Side-Chain Connections From Multiple Inputs

For plug-ins that support multiple side-chain inputs, you can create side-chain connections coming from multiple side-chain inputs of that plug-in.

PREREQUISITE

You are using an effect plug-in that supports several side-chain inputs, such as the **Squasher** plug-in.

PROCEDURE

1. In the **Project** window, select an 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, from the selector select the effect plug-in that supports several side-chain inputs.

   The selected insert effect is loaded and activated, and the audio is routed through it. The effect control panel opens.
4. On the effect control panel, click **Set up Side-Chain Routing**.
5. In the **Side-Chain Routing** panel, click **Select the Plug-in Side-Chain Input**, and, from the pop-up menu, select the plug-in input for the side-chain source.

   The number of available side-chain inputs depends on the plug-in.
6. Click **Add Side-Chain Source**, and select a source from the pop-up menu.
7. Optional: Repeat the steps above to activate more plug-in inputs.
8. Adjust the effect plug-in, as required and do not forget to activate the corresponding side-chain inputs.

RESULT

The number of possible side-chain inputs determines the number of bands that can be controlled by side-chain sources.

RELATED LINKS

Side-Chaining on page 418
Side-Chain Routing on page 421

Dither Effects

Dither effects allow you to control the noise produced by quantization errors that can occur when you mix down to a lower bit depth.

Dithering adds a special kind of noise at an extremely low level to minimize the impact of quantization errors. This is hardly noticeable and preferable to the distortion caused by the errors.

Applying Dither Effects

PROCEDURE

1. Select **Studio** > **MixConsole**.
2. Click **Functions Menu**.
3. Open the **Section Settings**, and activate **Fixed Number of Slots**.
4. Click **Edit Channel Settings** for the output channel.
5. In the **Inserts** section, click a post-fader effect slot, and select **Mastering** > **Lin Dither**.
6. On the plug-in panel, select a bit depth for the mixdown file you want to create.

RELATED LINKS

Export Audio Mixdown on page 1044

Effect Control Panel

The effect control panel allows you to set up the effect parameters. 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 Automation/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 Apply current settings to A and B

Copies the effect parameters of effect setting A to effect setting B, and vice versa.

6 Activate/Deactivate Side-Chaining

Activates/Deactivates the side-chain functionality.

7 Set up Side-Chain Routing

Allows you to set up the side-chain routing for the selected plug-in.

8 Preset browser

Opens the preset browser, where you can select another preset.

9 Load previous Program/Load next Program

Loads the previous/next program in the preset browser.

10 Preset Management

Opens a pop-up menu that allows you to save or load a preset.

11 Add VST Plug-in Picture to Media Rack

Adds a picture of the VST plug-in to the **Media** rack. This is available for plug-ins of other vendors only.

12 Functions menu

Opens a pop-up menu with specific functions and settings.

13 Show/Hide VST Quick Controls

Shows/hides the quick controls.

14 Focus Quick Controls Lock State: Locked/Unlocked

Allows you to lock the focus of the quick control to the plug-in window.

15 Focus Quick Controls Indicator

If this indicator is lit, the plug-in window has the quick control focus.

NOTE

For detailed information about the included effects and their parameters, see the separate document **Plug-in Reference**.

RELATED LINKS
Hiding/Showing Effect Control Panels on page 426

Effect Control Panel Context Menu

The context menu and the **Functions** menu on the effect control panel display functions and settings that are specific to the effect.

Do one of the following:

- Right-click into an empty area of the effect control panel.
- Open the **Functions** pop-up menu on the effect control panel.

The following functions are available:

Copy <VST effect name> Setting/Paste <VST effect name> Setting

Allows you to copy the effect settings and to paste them to another effect.

Load Preset/Save Preset

Allows you to load/to save a preset.

Default Preset

Allows you to define and save a default preset.

Switch to A Setting/Switch to B Setting

Switches to setting B when setting A is active, and to setting A when setting B is active.

Apply Current Settings to A/Apply Current Settings to B

Copies the effect parameters of effect setting A to effect setting B, and vice versa.

Activate Outputs

Allows you to activate one or more outputs for the effect.

Activate/Deactivate Side-Chaining

Activates/Deactivates side-chaining for the effect.

NOTE

This option is only available for VST 3 effects that support side-chaining.

Remote Control Editor

Opens the **Remote Control Editor**.

Switch to Generic Editor

Opens the generic editor for the effect.

Allow Window to be Resized

Allows for dynamic resizing of third-party plug-in windows in Cubase. This is useful if you activated **Enable HiDPI** (Windows only) in the **Preferences** dialog (**General** page) and your plug-in does not support dpi settings.

NOTE

Allow Window to be Resized is a plug-in-specific setting. Activate/deactivate it for every plug-in that requires it.

RELATED LINKS
General on page 1138
Side-Chaining on page 418

Fine-Tuning Effect Settings

You can take your effect parameter settings as a starting point for further fine-tuning and subsequent comparison of 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**. These settings can serve as a starting point for further fine-tuning.

Hiding/Showing Effect Control Panels

When you add an audio effect, the respective plug-in control panel opens automatically. You can hide the control panels from view. This contributes to a better overview, in case you added a number of plug-ins to your project whose control panels clutter up the screen.

PROCEDURE

- Select **Window** > **Hide Plug-in Windows**.

  NOTE

  Hide Plug-in Windows also hides VST instrument control panels.

RESULT

The control panels are hidden and sent to the back of the application. To show them again, select **Show Plug-in Windows**.

RELATED LINKS

Effect Control Panel on page 423

Closing All Control Panels

When you add an audio effect, the respective plug-in control panel opens automatically. You can close all control panels at once.

PROCEDURE

- Select **Window** > **Close All Plug-in Windows**.

  NOTE

  Close All Plug-in Windows also closes VST instrument control panels.

RESULT

The control panels are closed.

RELATED LINKS

Effect Control Panel on page 423

Effect Presets

Effect presets store the parameter settings of an effect. The included effects feature a number of presets that you can load, adjust, and save.

The following effect preset types are available:

- VST presets for a plug-in are plug-in parameter settings for a specific effect.
- Insert presets that contain the whole insert effects section with settings for each effect.

Effect presets are saved in the following location:

- Windows: **\Users\<user name>\My Documents\VST 3 Presets\<company>\<plug-in name>**
- macOS: **/Users/<user name>/Library/Audio/Presets/<company>/<plug-in name>**

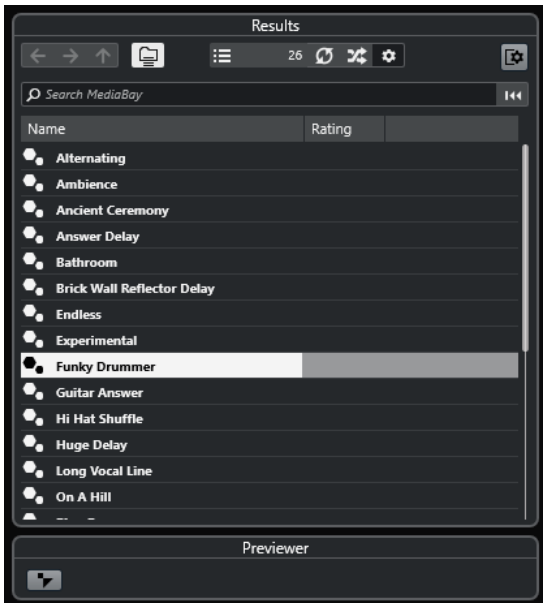
RELATED LINKS

Loading Presets for Effects on page 428
Loading Insert Presets on page 431

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.



The **Results** section of the presets browser lists the available presets for the selected effect.

Loading Presets for Effects

Most VST effect plug-ins feature 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. Click the preset browser field at the top of the control panel.

2. In the **Results** section, select a preset from the list.
3. Double-click to load the preset that you want to apply.

RESULT

The preset is loaded.

AFTER COMPLETING THIS TASK

To return to the preset that was selected when you opened the preset browser, click **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** dialog 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 dialog, and define attributes for the preset.
6. Click **OK**.

RESULT

The effect preset is saved.

RELATED LINKS

Attribute Inspector on page 642

Saving Default Effect Presets

You can save your effect parameter settings as default effect presets. This allows you to load your parameter settings automatically, every time you select the effect.

PROCEDURE

1. Open the **Preset Management** pop-up menu.

2. Select **Save as Default Preset**.
3. Click **Yes**.

RESULT

The effect settings are saved as default presets. 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

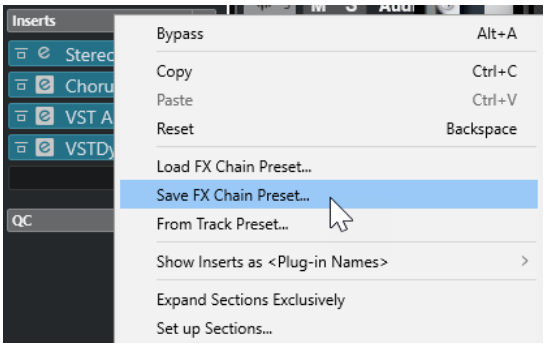
You can save the inserts for a channel as an inserts preset, including all parameter settings. Insert presets can be applied to audio, instrument, FX channel, or group tracks.

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. Right-click the **Inserts** section header, 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 presets.

Loading Insert Presets

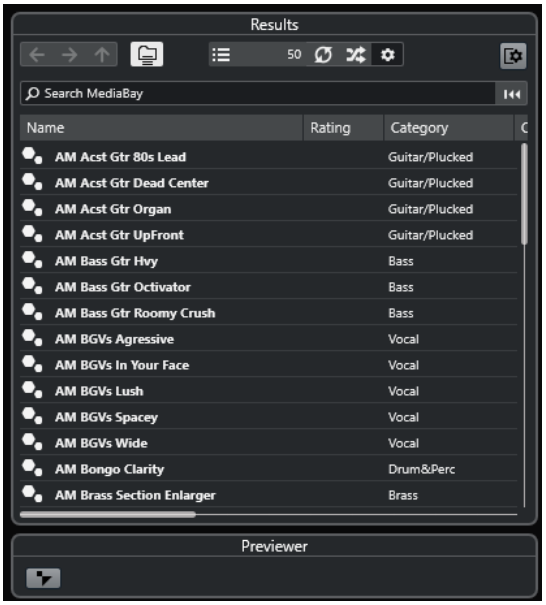
You can load insert presets into audio, group, instrument, and FX channels.

PREREQUISITE

You have saved a combination of insert effects as insert presets.

PROCEDURE

1. Select the track to which you want to apply the new preset.
2. In the **Inspector**, open the **Inserts** section.
3. Right-click the **Inserts** section header, 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 section.

PROCEDURE

1. Select the track to which you want to apply the new preset.
2. In the **Inspector**, open the **Inserts** section.
3. Right-click the **Inserts** section header, 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.

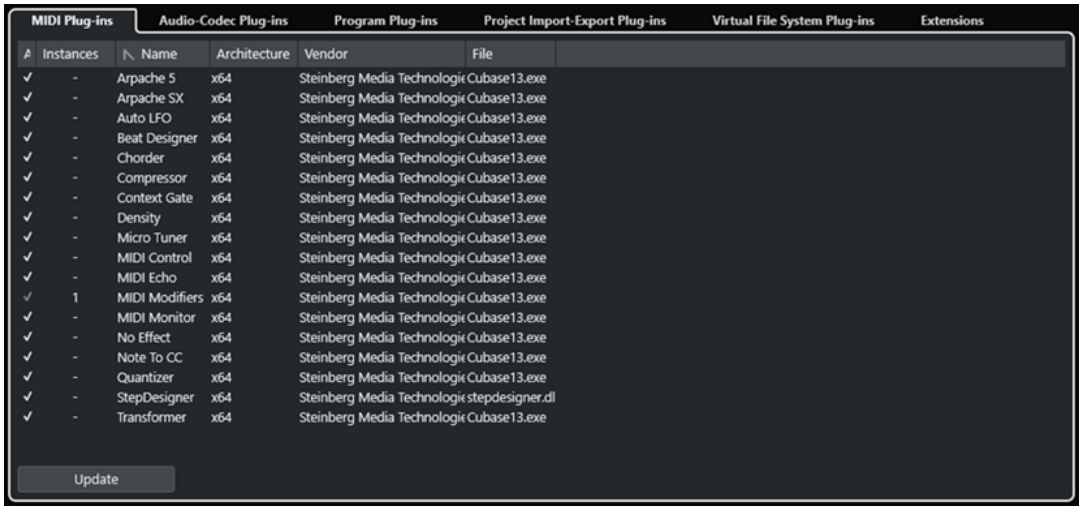
RELATED LINKS

Track Presets on page 181

System Component Information Window

The **System Component Information** window lists all 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 **System Component Information** window, select **Studio** > **More Options** > **System Component 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.

Architecture
The architecture 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 on 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 that is compatible with the plug-in.

Update (only available for MIDI Plug-ins)
Re-scans the designated plug-in folders for updated system component information.

Managing System Components in the System Component Information Window

- To make a plug-in available for selection, activate it in the left column.
  Only activated plug-ins are displayed in the effect selectors.
- To see where a plug-in is used, click 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 System Component Information Files

For archiving purposes or troubleshooting, you can save system component information as an XML file.

- The system component file contains information on the installed/available plug-ins, their version, vendor, etc.
- The XML file can be opened in any editor application that supports the XML format.

NOTE

The export function is not available for program plug-ins.

PROCEDURE

1. In the **System Component Information** window, right-click in the middle of the window, and select **Export**.

2. In the dialog, specify a name and a location for the export file.
3. Click **Save** to export the file.

Direct Offline Processing

Direct Offline Processing allows you to instantly add audio processes to the selected audio events, clips, or ranges, without destroying the original audio.

Applying offline effects is common practice in dialogue editing and sound design. Offline processing has several advantages over applying real-time mixer effects:

- The workflow is clip-based. This allows you to apply different effects to events on the same track.
- The **MixConsole** can be kept clean from insert effects and parameter changes. This facilitates subsequent mixing by another person, on a different system.
- Less CPU load is used.

Direct Offline Processing allows you to undo any changes regarding audio processes. You can always revert to the original version. This is possible because processing does not affect the actual audio files.

If you process an event, a clip, 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.

All applied offline processing is saved with the project and can still be modified after reopening the project. **Direct Offline Processing** operations on the selected audio are persistent in project backups.

Processing is always applied to the selection. The selection can include one or multiple events in the **Project** window or in the **Audio Part Editor**, an audio clip in the **Pool**, or a selection range on one or multiple events in the **Project** window or in the **Sample Editor**. If a selection is shorter than the audio file, only the selected range is processed.

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 **Continue** to process all shared copies.
- Select **New Version** to process the selected event only.

NOTE

This only works if **Open Options Dialog** is selected for the **On Processing Shared Clips** setting in the **Preferences** dialog (**Editing—Audio** page).

RELATED LINKS

Modifying Processes on page 439
Editing - Audio on page 1129
Direct Offline Processing Workflow on page 436
Direct Offline Processing Window on page 436

Direct Offline Processing Workflow

You can perform offline processing operations in the **Direct Offline Processing** window. The window always shows the processing of the selected audio.

When you add or modify offline processing, the following applies:

- If you add a process, its last used parameter settings are loaded. You can reset it to its default settings by clicking **Reset to Default Values**.
- All changes are instantly applied to the audio.
- If you modify parameters or remove processing, these changes are instantly applied to the audio.
- You get a visual feedback while a process is running.

  NOTE

  You can add, modify, or delete audio processes at any time, even if a process is running. A new rendering process is instantly started.

- You can undo and redo all **Direct Offline Processing** operations by using **Ctrl/Cmd** - **Z** or **Shift** - **Ctrl/Cmd** - **Z**.
- You can apply all offline processing permanently to the audio.
- If you load a project with offline processing of audio processes that are not available on your computer, these processes are shown as **Not available** in the **Direct Offline Processing** window.

RELATED LINKS
Direct Offline Processing Window on page 436
Key Commands for Direct Offline Processing on page 450
Applying Offline Processing Permanently on page 441

Direct Offline Processing Window

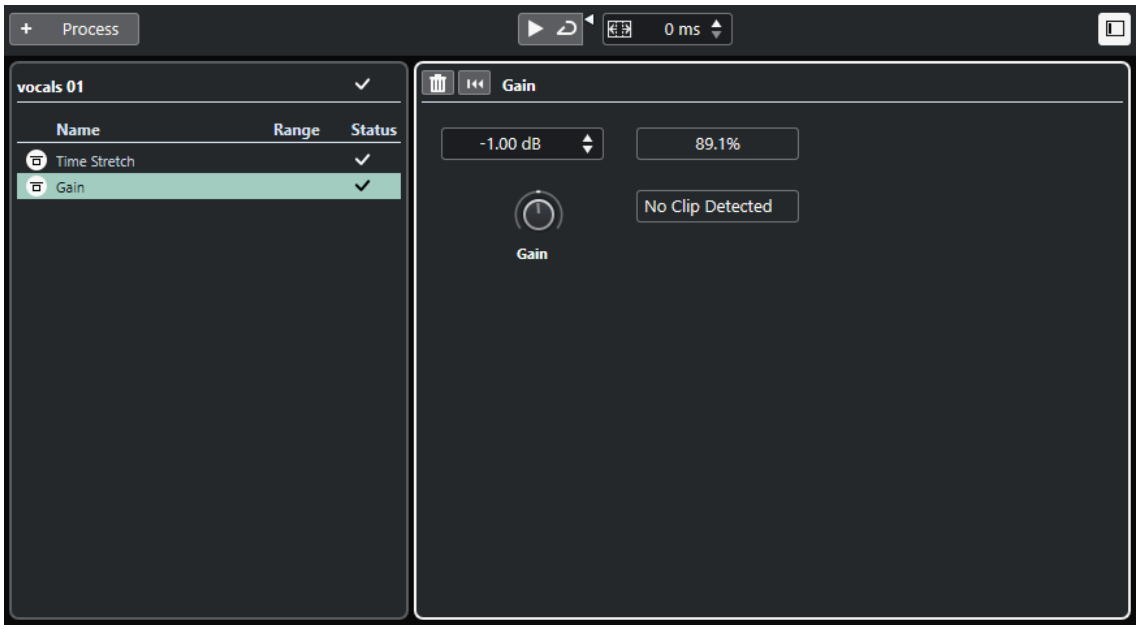
The **Direct Offline Processing** window allows you to add, modify, or delete audio processing instantly for one or multiple events, clips, or selection ranges in one window. Furthermore, you can undo any audio processing.

To open the **Direct Offline Processing** window, do one of the following:

- Select **Audio** > **Direct Offline Processing**.
- Press **F7**.
- On the **Project** window toolbar, click **Open Direct Offline Processing Window**.
- Select **Audio** > **Processes**, and, from the submenu, select a process.

  NOTE

  Processes without adjustable parameter settings, such as **Silence**, do not open the **Direct Offline Processing** window when applied from the menu or using a key command.



In the **Direct Offline Processing** window, the following options and settings are available:

Toolbar

Allows you to add audio processing, to audition the audio with the current edits, and to make global settings for offline processing.

Process list

Lists all built-in audio processes that you add to the selected event, clip, or range. You can bypass items in this list. An icon to the right of each process shows the status.

If only a range of a selected event is processed, this is indicated by a waveform icon in the **Range** column.

If more than one processed event or clip is selected, the **Count** column shows how many instances of each process are used on the whole selection.

You can copy or cut processes with all settings and paste them to other events, clips, or ranges, delete them, and make offline processing permanent by using the context menu.

Process panel

Allows you to modify, reset, or delete the selected audio process.

RELATED LINKS
Applying Processing on page 438
Applying Processing to Multiple Events on page 439
Direct Offline Processing Toolbar on page 437

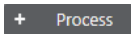
Direct Offline Processing Toolbar

The toolbar of the **Direct Offline Processing** window allows you to apply audio processing, to audition the audio with the current edits, and to make global settings for offline processing.

On the toolbar, the following options and settings are available:

Add Processes

Add Process



Allows you to add a built-in audio process to the selected event or clip.

Left Divider

Left Divider

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

Audition

Audition

Allows you to audition the selected audio with all processing from the top of the process list to the process selected in the list. All processes below the selected process are ignored during playback.

To bypass the selected process for auditioning, press **Alt/Opt** and click **Audition**.

Audition Loop

Loops the playback until you deactivate the **Audition** button.

Audition Volume

Allows you to adjust the volume.

Process Range

Extend Process Range in ms

Allows you to extend the process range beyond the left and right event borders, enabling you to enlarge the event later while retaining the processing that you applied.

RELATED LINKS

Process Range Extension on page 439

Applying Processing

You can add processing to one or multiple events, clips, or ranges in the **Direct Offline Processing** window. This includes audio processes and **Sample Editor** operations, such as **Cut**, **Paste**, **Delete**, and using the **Draw** tool.

PROCEDURE

1. Do one of the following:
   - Select an event or a range in the **Project** window.
   - Select a clip in the **Pool**.
   - Select a range in the **Sample Editor**.
   - Select an event or a range in the **Audio Part Editor**.
2. Select **Audio** > **Direct Offline Processing**.
3. On the **Direct Offline Processing** toolbar, click **Add Process** and select an audio process.

   The selected audio process is added to process list in the left zone.
4. Activate **Audition**, and make your changes on the process panel.

You get a visual feedback while a process is running. However, even if the processing is not finished, you can activate **Audition** at any time.

RESULT

The audio process is rendered into the audio.

In the **Project** window, the **Pool** or the **Audio Part Editor**, a waveform symbol is displayed for the processed events.

Applying Processing to Multiple Events

Direct Offline Processing allows you to add the built-in audio processes to multiple events at once. You can also modify or delete processing on multiple events simultaneously.

- To apply audio processes to multiple events, select the audio and add, modify, or delete the processing.

NOTE

In the **Direct Offline Processing** window, you can also edit the audio processing of multiple clips in the **Pool** simultaneously.

RELATED LINKS

Built-In Audio Processes on page 442
Direct Offline Processing Window on page 436

Process Range Extension

You can extend the process range over the left and the right borders of the audio event.

When adding processing to an event, by default, only the part of the audio clip that corresponds to the event is processed. If you extend the process range, a specified additional range of the clip before and after the event borders is also processed. This allows you to enlarge the event, even after applying the processing.

- To extend the process range, click in the **Extend Process Range in ms** field on the **Direct Offline Processing** toolbar, and specify a value in milliseconds.

NOTE

- For this to work, audio must be available outside the event borders.
- This setting works globally for all events.

Modifying Processes

You can delete or modify some or all processing from a clip in the **Direct Offline Processing** window. This includes the audio processes on the **Processes** pop-up menu and **Sample Editor** operations, such as **Cut**, **Paste**, **Delete**, and drawing with the **Draw** tool.

PROCEDURE

1. Do one of the following:
   - Select the processed event in the **Project** window or in the **Audio Part Editor**.

NOTE

In the **Project** window or in the **Audio Part Editor**, processed events are indicated by a waveform symbol in the upper right corner.

- Select the processed clip from the **Pool**.

  NOTE

  In the **Pool**, processed clips are indicated by a waveform symbol in the **Status** column.

- Select the processed range in the **Sample Editor**.

2. Select **Audio** > **Direct Offline Processing**.
3. In the process list, select the process that you want to edit by clicking on it.
4. Do one of the following:
   - Activate **Audition**, and modify the settings of the process.
   - Reset the process to its default settings by clicking **Reset to Default Values**.
   - Delete the process by clicking **Delete** on the process panel.

     NOTE

     Alternatively, you can right-click the process list and select **Delete**.

   - To delete all processing applied to the event, right-click the process list, and select **Delete All**.

RELATED LINKS
Direct Offline Processing Window on page 436
Pool Window Columns on page 590

Reordering the Process List

You can reorder the operations in the **Direct Offline Processing** process list by dragging.

PROCEDURE

- Click an audio process, and move it by dragging.

RESULT

The offline processing operations are rendered into the audio in the specified order.

Bypass Processes

In the **Direct Offline Processing** window, you can bypass processes. This allows you to hear the audio without the processes.

- To activate/deactivate bypass for a process, click the **Bypass Process** button to the left of the process.

NOTE

- If you activate/deactivate **Bypass Process**, the complete process chain is recalculated. Depending on the length of the audio and on the number of processes, this may take some time. In the process list, you get a visual feedback while a process is running.

- The bypass status is saved with the project.

Copying and Pasting Processes

You can copy and paste audio processes, including their parameter settings, between events, clips, and ranges.

PROCEDURE

1. Select a processed audio event, clip, or range.

   NOTE

   Processing on selections of multiple events cannot be copied.

2. In the **Direct Offline Processing** window, select one or multiple items from the process list.
3. Right-click the process in the process list, and select **Copy** from the context menu.
4. Select the target events or clips.
5. In the **Direct Offline Processing** window, right-click the process in the process list and select **Paste**.

RESULT

The copied processes and all parameter settings are added to the process list of the selected audio.

Applying Offline Processing Permanently

You can apply all offline processing permanently to the audio.

PREREQUISITE

You have applied audio processes to an event, clip, or range, and you are sure that you do not need to edit the processing anymore.

IMPORTANT

Making offline processing permanent cannot be undone.

PROCEDURE

1. Select the processed event, clip, or range.
2. Select **Audio** > **Make Direct Offline Processing Permanent**.

   NOTE

   Alternatively, select **Make All Permanent** from the context menu of the **Direct Offline Processing** process list.

3. Click **OK**.

RESULT

- All processing and all applied effects are permanently added to the selected event, clip, or range.
- The process list is emptied.

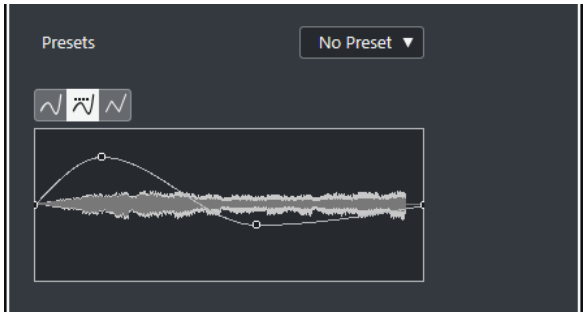
- The event or clip is no longer marked as offline-processed by a waveform symbol.

Built-In Audio Processes

Cubase provides several built-in audio processes that can be used for **Direct Offline Processing**.

Envelope

Envelope allows you to apply a volume envelope to the selected audio.



Curve Type buttons

Determine whether the corresponding envelope uses **Spline Interpolation**, **Damped Spline Interpolation**, or **Linear Interpolation**.

Envelope display

Shows the shape of the envelope. The resulting waveform shape is shown in a dark tone, while the current waveform shape is displayed in a light tone.

- 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.

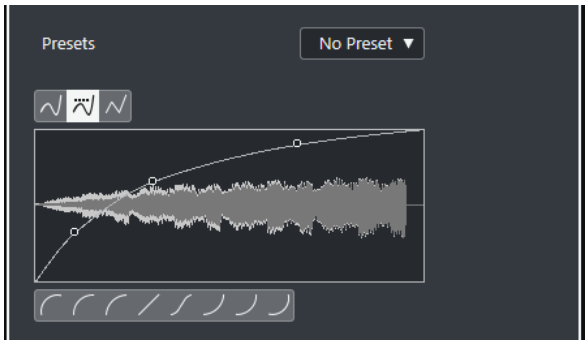
Presets pop-up menu

Allows you to manage your presets.

- To save a preset, select **Save Preset** from the pop-up menu, enter a name, and click **OK**.
- To apply a preset, select it from the pop-up menu.
- To remove a preset, select it from the pop-up menu, and click **Remove Preset**.

Fade In/Fade Out

Fade In and **Fade Out** allow you to apply a fade to the selected audio.



Curve Type buttons

Determine whether the corresponding envelope uses **Spline Interpolation**, **Damped Spline Interpolation**, or **Linear Interpolation**.

Fade display

Shows the shape of the fade curve. The resulting waveform shape is shown in a dark tone, while the current waveform shape is displayed in a light tone.

- 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.

Presets pop-up menu

Allows you to manage your presets.

- To save a preset, select **Save Preset** from the pop-up menu, enter a name, and click **OK**.
- To apply a preset, select it from the pop-up menu.
- To remove a preset, select it from the pop-up menu, and click **Remove Preset**.

Curve Shape buttons

These buttons give you quick access to some common curve shapes.

Gain

Gain allows you to change the gain, that is, the level of the selected audio.

Gain

Allows you to set a gain value between -50 dB and +20 dB.

Clipping Detection text

This text is displayed if you use **Audition** and the gain setting results in audio levels above 0 dB.

NOTE

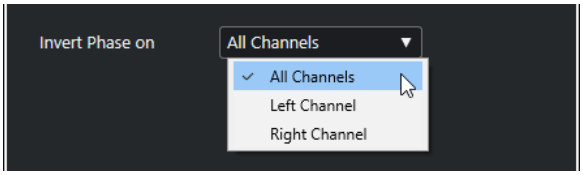
In case of clipping, lower the **Gain** value, and use the **Normalize** audio process instead. This allows you to increase the level of the audio to the highest extent possible without causing clipping.

RELATED LINKS

Normalize on page 444

Invert Phase

Invert Phase allows you to invert the phase of the selected audio.



For stereo audio files, a pop-up menu is available. It allows you to specify which channels are phase-inverted: the left channel, the right channel, or both.

Normalize

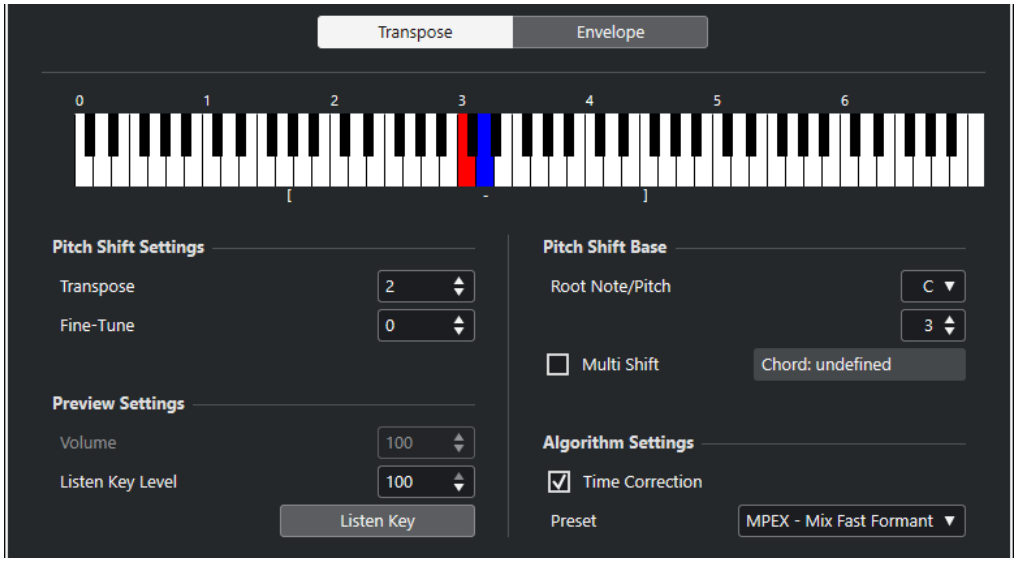
Normalize allows you to raise or lower the level of audio that was recorded at an inappropriate input level.

Maximum Peak Level

Allows you to normalize your audio based on the maximum peak level. **Maximum Peak Level in dBFS** sets a maximum peak level for the audio, between -50 dB and 0 dB. The current maximum level of the selected audio is subtracted from this maximum level, and the gain is raised or lowered by the resulting amount.

Pitch Shift

Pitch Shift 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.



On the **Transpose** tab, the following options are available:

Keyboard display

Shows a graphic overview of the transposition, with the root note indicated in red and the transposed key indicated 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 the keyboard display.
- To specify a transpose interval, click one of the keys.
- To specify a chord, activate **Multi Shift**, and click several keys.

  To remove a transpose interval, click a blue key.

Pitch Shift Settings

Transpose

Allows you to specify the amount of pitch shift in semitones.

Fine-Tune

Allows you to specify the amount of pitch shift in cents.

Preview Settings

Volume

Allows you to lower the volume of the pitch-shifted sound. This is not available if **Time Correction** is activated.

Listen Key Level

Allows you to adjust the level of the pitch-shifted sound. Click **Listen Key/Listen Chord** to play a test tone of the pitch-shifted sound.

Pitch Shift Base

Root Note/Pitch

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.

Multi Shift

Activate this to specify several transpose keys and to 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 on the keyboard display so that it is displayed in blue.

Algorithm Settings

Time Correction

Activate this option to shift the pitch without affecting the length of the audio. If this is deactivated and you raise the pitch, the audio section is shortened.

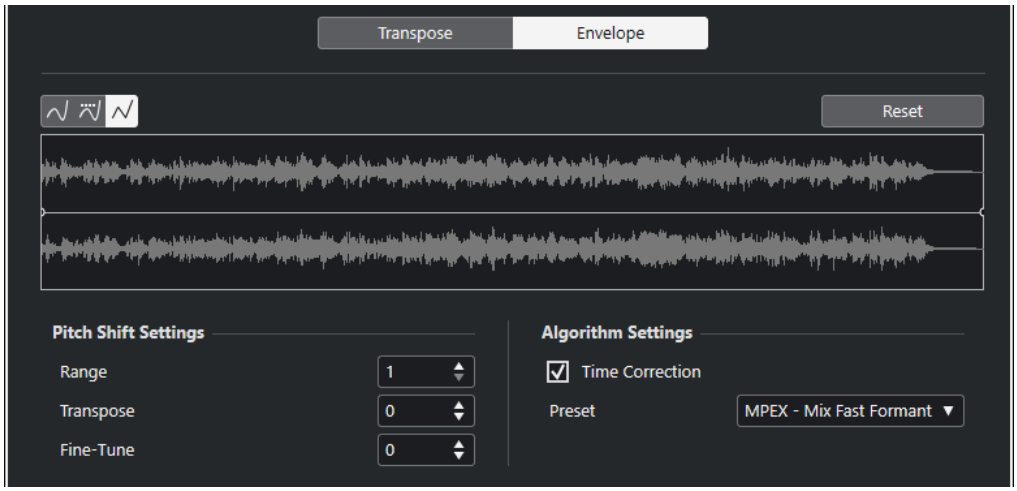
Preset

Allows you to select an algorithm.

RELATED LINKS
Time Stretch and Pitch Shift Algorithms on page 452

Envelope-Based Pitch Shift

On the **Envelope** tab, you can specify an envelope curve as a base for the pitch shift.



Curve Type buttons

Determine whether the corresponding envelope uses **Spline Interpolation**, **Damped Spline Interpolation**, or **Linear Interpolation**.

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 a positive pitch shift, curve points below the center line indicate a 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.
- To remove all curve points, click **Reset** above the envelope display.

Pitch Shift Settings

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

Allows you to specify the amount of pitch shift in semitones.

Fine-Tune

Allows you to specify the amount of pitch shift in cents.

Algorithm Settings

Time Correction

Activate this option to shift the pitch without affecting the length of the audio. If this is deactivated, raising the pitch shortens the audio section and vice versa, similarly to changing the playback speed on a tape recorder.

Preset

Allows you to select an algorithm.

RELATED LINKS
MPEX on page 453

Remove DC Offset Option

Remove DC Offset allows you to remove any DC offset in the audio selection.

If your audio signal contains too large a component of direct current, you may notice that it is not centered around the zero level axis. This is called DC offset.

- To verify if your audio contains DC offsets, select the audio, and select **Audio** > **Statistics**.

IMPORTANT

DC offset is normally present throughout the entire recording. Therefore, always apply **Remove DC Offset** to complete audio clips.

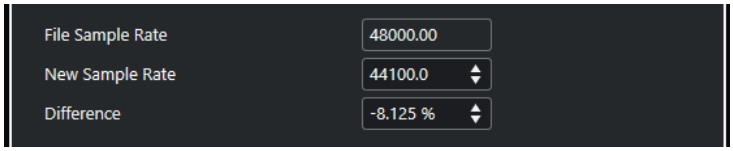
There are no adjustable parameters for this audio process.

RELATED LINKS
Statistics Window on page 461

Resample

Resample 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 new sample rate.

Reverse

Reverse allows you to reverse the audio selection so that it sounds as if you play a tape backwards. There are no adjustable parameters for this audio process.

Silence

Silence allows you to replace the selection with silence. There are no adjustable parameters for this audio process.

Stereo Flip

Stereo Flip allows you to manipulate the left and the 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.

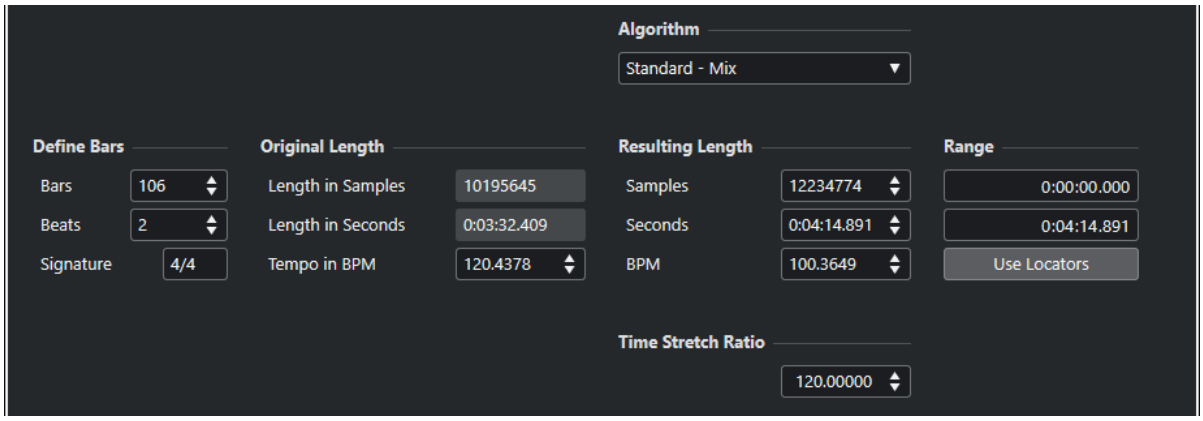
Right to Stereo
Copies the right channel sound to the left channel.

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

Time Stretch allows you to change the length and the tempo of the selected audio without affecting the pitch.



Define Bars

You can set the length of the selected audio and the time signature in this section.

Bars
Allows you to set the length of the selected audio in bars.

Beats

Allows you to set the length of the selected audio in beats.

Signature

Allows you to set the time signature.

Original Length

This section contains information and settings regarding the audio that is selected for processing.

Length in Samples

Shows the length of the selected audio in samples.

Length in Seconds

Shows 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

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

Shows the resulting length in samples.

Seconds

Shows the resulting length in seconds.

BPM

Shows the resulting tempo in beats per minute. For this to work, the **Original Length** values must be specified.

Range

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.

Algorithm

Allows you to select a time stretch algorithm.

Time Stretch Ratio

Allows you to set 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.

RELATED LINKS
Time Stretch and Pitch Shift Algorithms on page 452

Key Commands for Direct Offline Processing

You can apply offline processing by using key commands.

If you add audio processes via key commands, the following applies:

- The current settings are used.
- The **Direct Offline Processing** window opens. This does not apply if the selected process does not feature any adjustable parameters or if the window is in the background or minimized.
- You can apply offline processing by using key commands, even with **Auto Apply** deactivated.

If the corresponding section in the **Direct Offline Processing** window has the focus, the following default key commands apply:

Option	Key command
Open/Close **Direct Offline Processing** window	**F7**
Set focus within **Direct Offline Processing** window	**Tab**
Navigate in the process list	**Up Arrow** / **Down Arrow**
Activate/Deactivate Audition (**Playback Toggle triggers Local Preview** must be activated in the **Preferences** dialog)	**Space**
Delete selected item from process list	**Delete**
Select all items in process list	**Ctrl** / **Cmd** - **A**
Cut selected items from process list	**Ctrl** / **Cmd** - **X**
Copy selected items in process list	**Ctrl** / **Cmd** - **C**
Paste items to process list	**Ctrl** / **Cmd** - **V**
Undo	**Ctrl** / **Cmd** - **Z**

To define key commands for further **Direct Offline Processing** operations, and for directly adding particular audio processes, use the **Key Commands** dialog.

RELATED LINKS
Direct Offline Processing Window on page 436
Transport on page 1147
Key Commands on page 1094

Time Stretch and Pitch Shift Algorithms

In Cubase, time-stretching and pitch-shifting algorithms are used for offline processes, in the **Sample Editor**, or for the **Flattening Realtime Processing** function. Depending on the feature, **élastique**, **MPEX**, or **Standard** algorithm presets are available.

NOTE

MPEX algorithms are not supported on Apple silicon-based computers.

RELATED LINKS
Time Stretch on page 448
Pitch Shift on page 444
Sample Editor on page 464
élastique on page 452
MPEX on page 453
Standard on page 453
Limitations on page 454

élastique

The **élastique** algorithm is suited for polyphonic and monophonic material.

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 at varying speeds. 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 still delivers very good results. You can use this for drum loops, mixes, and 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 complex material or for higher stretch factors. This high-quality setting is quite CPU-intensive.

NOTE

- If you apply **Pitch Shift** as an offline process, you can choose between the regular setting and a setting where the formants are preserved for each quality setting.
- **MPEX** algorithms are not supported on Apple silicon-based computers. If you load a project that uses **MPEX**, you can choose to use a comparable **élastique** algorithm instead, or to keep the **MPEX** processing by making all processes permanent.

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 **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 into 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 the percentage of the whole length of the grains, and it sets a variation in positioning, so that the overlapping area sounds smooth. A variance setting of 0 produces a sound akin to the time stretching used in early samplers, whereas higher settings produce more rhythmic smearing effects but fewer 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 you 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 **élastique**, there are no limitations.

Audio Functions

Cubase offers particular functions for analyzing the audio in your project.

RELATED LINKS
Detect Silence Dialog on page 456
Spectrum Analyzer Window on page 460
Statistics Window on page 461

Detect Silence Dialog

The **Detect Silence** dialog allows you to search for silent sections in events. You can split events and remove the silent parts from the project, or create regions corresponding to the non-silent sections.

- To open the **Detect Silence** dialog for a selected audio event, clip, or selection range, select **Audio** > **Advanced** > **Detect Silence**.

  NOTE

  If you select multiple events, you can process the selected events successively with individual settings or apply the same settings to all selected events simultaneously.

The following options are available:

Waveform display

Shows the waveform of the selected audio and allows you to preview the analyzed audio before it is processed.

When you move the mouse over the waveform, the mouse pointer changes to a speaker icon. Click the waveform, and hold to play back the audio from this position. The **Preview** slider allows you to set the preview level. **Mute Gaps** mutes sections that are detected as silence when previewing.

- To zoom in and out of the waveform, use the zoom slider to the right, or hold **Ctrl/Cmd** and use the mouse wheel.
- To scroll the waveform, use the scrollbar or the mouse wheel.
- To adjust the **Open Threshold** and **Close Threshold** values, move the squares at the beginning and at the end of the audio file.

The **Detection** section features the following options:

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 option to set the same values for **Open Threshold** and **Close Threshold**.

Minimum Time Open

Determines the minimum time that the function lets the sound pass. If your audio contains repeated short sounds and this results in too many short open sections, try raising this value.

Minimum Time Closed

Determines the minimum time that the function remains closed after detecting silence. Set this to a low value to make sure that you do not remove sounds.

Pre-roll

Causes the function to open slightly before an open section. Use this option to avoid removing the attack of sounds.

Post-roll

Causes the function to close slightly after an open section. Use this option to avoid removing the natural decay of sounds.

The **Result** section features the following options:

Number of Sections

Shows the number of events that are created if you click **Process**.

Add as Regions

Creates regions of the non-silent sections.

Region Name

Allows you to specify a name for the non-silent sections.

Auto Number Start

Allows you to specify the start number for the numbers that are automatically appended to the region names.

Strip Silence

Splits the event at the beginning and at the 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.

Apply Fades

Applies fade ins and fade outs of the set length to the resulting events.

Analyze

Analyzes the audio event and redraws the waveform display to indicate which sections are considered silent.

Auto

Activate this option to analyze the audio event and to 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.

Process

Processes the audio according to your settings.

RELATED LINKS

Removing Silent Sections on page 459

Removing Silent Sections

The **Detect Silence** dialog allows you to detect and remove silent sections of your audio.

PROCEDURE

1. Select one or multiple audio events in the **Project** window.
2. Select **Audio** > **Advanced** > **Detect Silence**.
3. In the **Detect Silence** dialog, make your changes.
4. Click **Analyze** to analyze the audio.

   The audio is analyzed, and the waveform is redrawn to indicate which sections are considered silent according to your settings. The number of detected regions is displayed.
5. Optional: Click and hold the waveform display to preview the result.

   If **Mute Gaps** is activated, silent sections are muted during preview.
6. Optional: In the **Detection** section, readjust the settings until you are satisfied with the result.
7. Optional: In the **Result** section, activate **Add as Regions**.
8. In the **Result** 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.

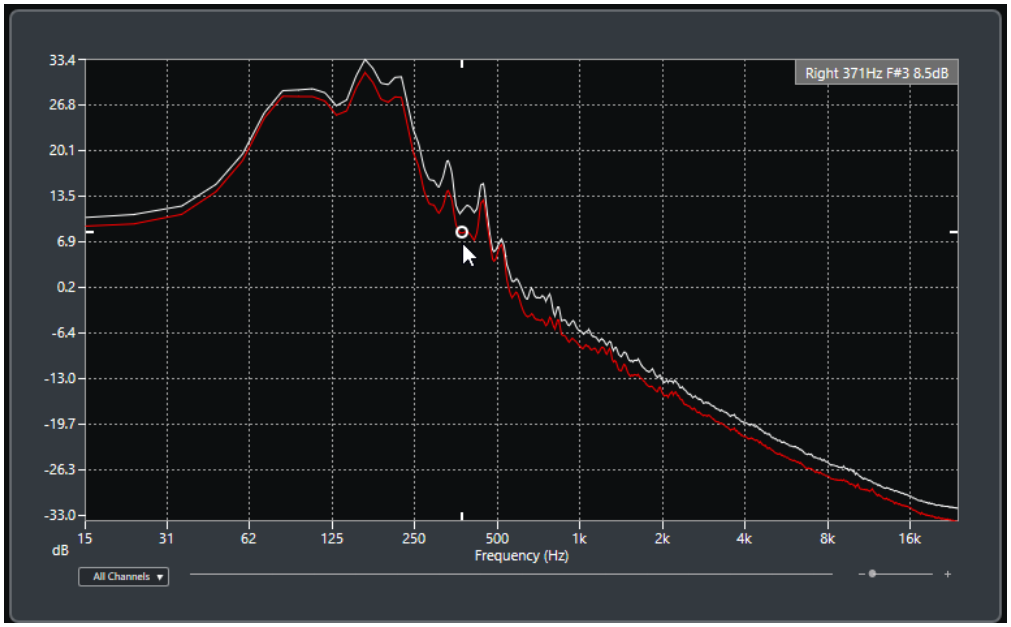
RELATED LINKS

Detect Silence Dialog on page 456

Spectrum Analyzer Window

The **Spectrum Analyzer** window displays the audio spectrum of an event, clip, or selection range as a two-dimensional graph, with frequency range on the x-axis and level distribution on the y-axis.

- To open the **Spectrum Analyzer** window for a selected audio event, clip, or selection range, select **Audio** > **Spectrum Analyzer**.



Frequency display

Shows the frequency graphs for the analyzed audio.

If you hover the mouse pointer over a certain position, the channel, frequency, note, and level at that position are shown in the value field at the top of the display.

Channel selector

For multi-channel audio, this pop-up menu allows you to select which channels are shown in the frequency display.

Zoom slider

Allows you to zoom in and out horizontally.

RELATED LINKS
Analyzing the Audio Spectrum on page 460

Analyzing the Audio Spectrum

The **Spectrum Analyzer** allows you to analyze the audio of a selected event, clip, or selection range.

PROCEDURE

1. Select an audio event, clip, or a selection range.
2. Select **Audio** > **Spectrum Analyzer**.

RESULT

The audio spectrum of the selected event, clip, or selection range is displayed as a two-dimensional graph in the **Spectrum Analyzer** window.

AFTER COMPLETING THIS TASK

You can display the difference in level between two positions on the same or on different graphs.

RELATED LINKS

Comparing Level Values on page 461

Comparing Level Values

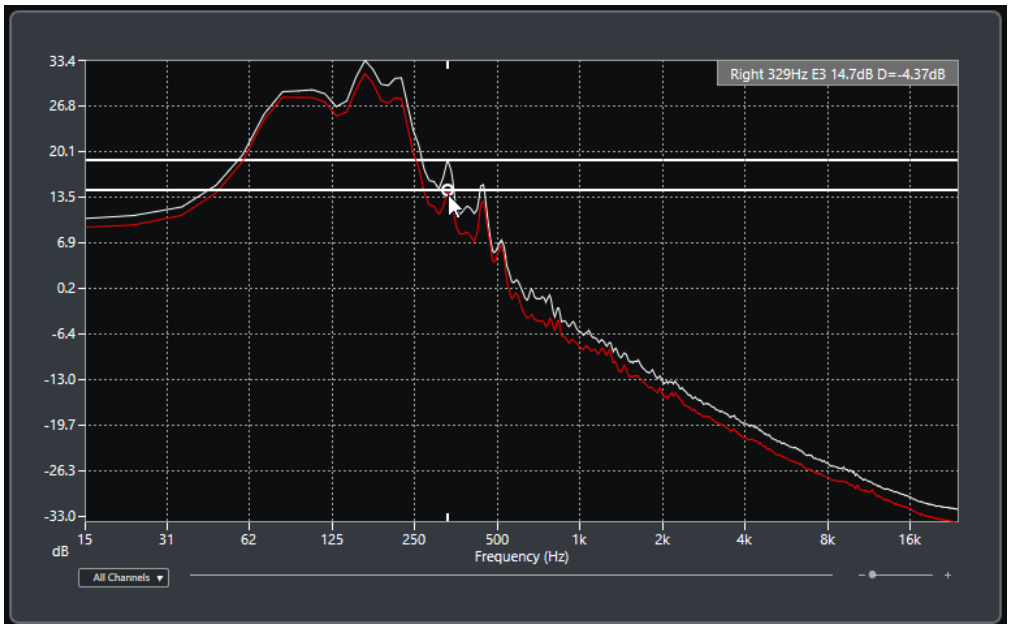
You can display the difference in level between two positions on the same or on different graphs in the **Spectrum Analyzer** window.

PROCEDURE

1. Move the mouse pointer to the first position and right-click to select it.
2. Move the mouse pointer to the second frequency position.

RESULT

The difference in level between the positions is displayed as value **D** in the value field.



AFTER COMPLETING THIS TASK

Click the frequency display to reset the selection of the first position.

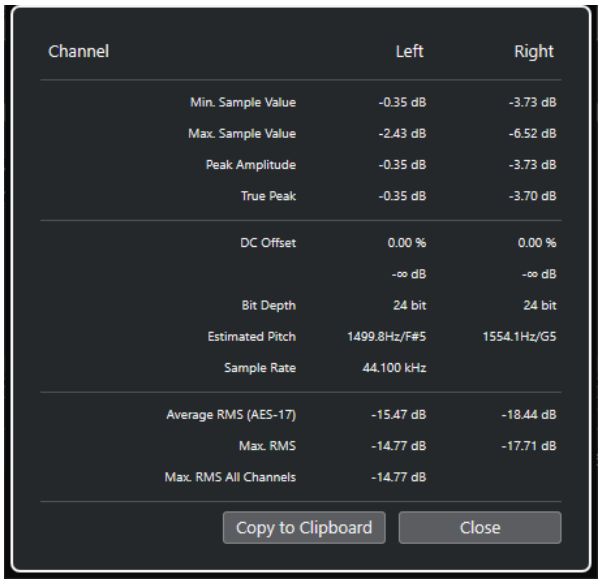
RELATED LINKS

Spectrum Analyzer Window on page 460

Statistics Window

The **Statistics** function analyzes the selected audio events, clips, or selection ranges.

- To open the **Statistics** window for a selected audio event, clip, or selection range, select **Audio** > **Statistics**.



The **Statistics** window shows 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.

Bit Depth
Shows the current calculated bit depth.

Estimated Pitch
Shows the estimated pitch.

Sample Rate
Shows the sample rate.

Average RMS (AES17)
Shows the average loudness, in accordance with the AES17 standard.

Max. RMS
Shows the highest RMS value.

Max. RMS All Channels
Shows the highest RMS value of all channels.

RELATED LINKS
Remove DC Offset Option on page 447

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, as well as 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 changes to specify if you want the **Sample Editor** to open in a separate window or in the lower zone of the **Project** window.

The **Sample Editor** window:

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**

Shows an overview of the whole audio clip and indicates which part of the clip is shown in the waveform display.

4 **Sample Editor Inspector**

Contains audio editing tools and functions.

NOTE

The **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 66
Opening the Editor Inspector on page 56
Sample Editor Toolbar on page 465
Info Line on page 472
Overview Line on page 472
Sample Editor Inspector on page 473
Ruler on page 479
Waveform Display on page 479
Regions List on page 481

Sample Editor 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.

Solo Editor Mode

Allows you to select a mode for the **Solo Editor** function.

- **Solo All Clips** uses all clips in the editor display.
- **Solo follows 'Clip Editing Mode'** uses only the clips specified via the **Clip Editing Mode**.

Left Divider

Left Divider

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

Auto-Scroll

Auto-Scroll

Keeps the project cursor visible during playback.

Select Auto-Scroll Settings

Allows you to activate **Page Scroll** or **Stationary Cursor** and to activate **Suspend Auto-Scroll When Editing**.

Preview

Audition

Plays back the selected audio.

Audition Loop

Loops the playback until you deactivate **Audition**.

Audition Volume

Allows you to adjust the volume.

Tool Buttons

Range Selection

Selects ranges.

Draw

Draws a volume curve.

Zoom

Zooms in. Hold **Alt/Opt**, and click to zoom out.

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.

Acoustic Feedback

Acoustic Feedback

Automatically plays back a VariAudio segment when you modify the pitch.

Snap

Snap to Zero Crossing

Restricts editing to zero crossings, that is, positions where the amplitude is zero.

Snap On/Off

Restricts horizontal movement and positioning to the specific positions.

Grid Options

Show/Hide Grid

Shows/Hides the grid in the waveform display.

Grid Type

Allows you to select a grid type. The options depend on the display format that is selected for the ruler. If you select **Seconds** as the ruler format, time-based grid options are available. If you select **Bars+Beats** as the ruler format, musical grid options are available.

Quantize

Apply Quantize

Applies the quantize settings.

Quantize Presets

Allows you to select a quantize preset.

Soft Quantize On/Off

Activates/Deactivates soft quantize.

AudioWarp Quantize On/Off

Activates/Deactivates **AudioWarp** quantize.

Open Quantize Panel

Opens the **Quantize Panel**.

Musical Mode

Musical Mode

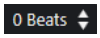
Locks audio clips to the project tempo by using realtime time stretching.

Musical Information

Number of Bars Defined in Audio File

Displays the estimated bars of your audio file.

Remaining Number of Beats Defined in Audio File



Displays the remaining number of beats of your audio file.

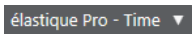
Defined Tempo of Audio File

Displays the estimated tempo of your audio file.

Defined Time Signature of Audio File

Displays the estimated time signature of your audio file.

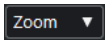
Warping Algorithm for Audio Clip



Allows you to select a warp algorithm.

View Options

Zoom Mode



Allows you to select a zoom mode for the waveform display.

- If **Global Zoom** is selected, the display follows the zoom and scroll controls of the **Sample Editor**.
- If **Clip-Based Zoom** is selected, the display automatically zooms to the clip of the selected event. In this mode, you cannot scroll beyond the clip borders.
- If **Auto-Zoom to Event** is selected, the display automatically zooms to the active event. In this mode, you can scroll between project start and end.

NOTE

If the **Definition** section of the **Sample Editor** Inspector is opened, **Zoom Mode** is automatically switched from **Global Zoom** to **Clip-Based Zoom**.

Editor Display Mode

Allows you to select a display mode for the waveform display.

- If **Show Clips and Events** is selected, the display shows the clips and the start and end boundaries of the events that are opened in the **Sample Editor**.
- If **Show Events** is selected, the display shows only the waveform between the start and end boundaries of the events that are opened in the **Sample Editor**.
- If **Show Clips** is selected, the display shows only the clips of the events that are opened in the **Sample Editor**, but not the event boundaries.

Clip Editing Mode

Sets the editing mode for clips.

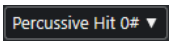
- **All Clips** allows you to edit all clips that are opened in the **Sample Editor**.
- **Active Clip** restricts editing operations to the clip that you activated in the **Activate Clip for Editing** pop-up menu.
- **All Clips on Active Track** allows you to edit all clips on the active track.

Clip Display Mode

Sets the display mode for clips.

- **Show All Clips** shows the waveform images of all clips that are opened in the **Sample Editor**.
- **Show Active Clip** shows only the waveform image of the clip that you activated for editing in the **Activate Clip for Editing** pop-up menu.

Activate Clip for Editing



Lists all audio clips that are opened in the **Sample Editor** and allows you to activate one of them for editing.

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.

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.

Loop Start Time

The independent track loop start time.

Loop End Time

The independent track loop end time.

Right Divider

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.

Show/Hide Left Zone

Allows you to activate/deactivate the left zone.

Show/Hide Regions

Allows you to activate/deactivate the regions.

RELATED LINKS
Auto-Scroll Settings Menu on page 245
Suspend Auto-Scroll When Editing on page 245

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 to the right.

RESULT

The audio is played back, and you can hear at which position the cursor is located.

NOTE

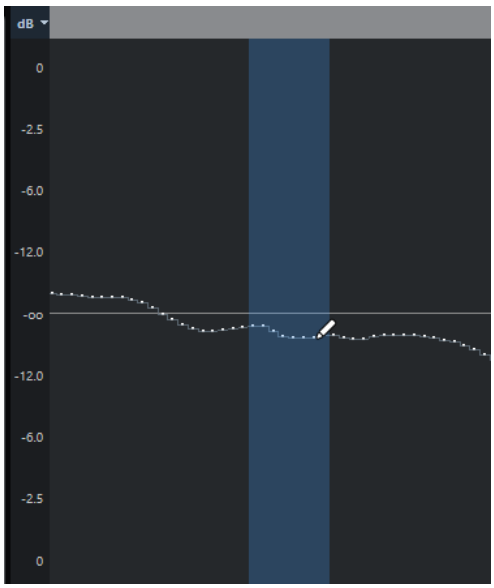
You can determine the speed and the pitch of the playback by dragging faster or more slowly.

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 highest zoom level.
2. On the toolbar, 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

The **Draw** tool cannot be used when the **VariAudio** section is open.

Selecting a Range with the Range Selection Tool

The **Range Selection** tool in the **Sample Editor** toolbar allows you to select a range.

PREREQUISITE

Snap to Zero Crossing 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** pop-up menu in the **Range** section of the **Sample Editor Inspector** to select ranges.

RELATED LINKS

Range Editing in the Project Window and in the Editors on page 215
Select Menu in the Range Section on page 476

Info Line

The info line shows information about the audio clip, such as the audio format and the selection range.

- To show or hide the info line, click **Set up Window Layout** on the toolbar, and activate or deactivate **Info Line**.

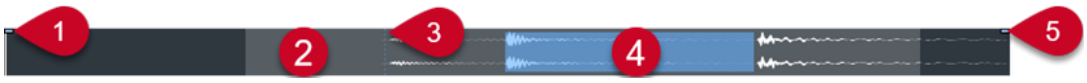
  The on/off status of the info line in the **Sample Editor** window and in the lower zone editor are independent of each other.

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** 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.

1 Event Start

Indicates the start of the audio event.

2 **Waveform display**

The area in lighter gray indicates 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 the 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.

3 **Snap Point**

The dotted vertical line indicates the start of the audio event.

4 **Selection**

The blue area indicates which section is selected in the waveform display.

5 **Event End**

Indicates the end of the audio event.

Sample Editor Inspector

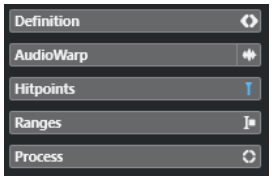
The **Inspector** shows controls and parameters that allow you to edit the audio event that is opened in the **Sample Editor**.

- 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 56

Definition Section

The **Definition** section allows you to adjust the audio grid and to define the musical context of your audio. You can use the available functions to match an audio file or an audio loop to the project tempo.

- To open the **Definition** section, click its tab in the **Sample Editor Inspector**.

NOTE

If the **Definition** section is opened, the **Sample Editor Zoom Mode** is automatically switched from **Global Zoom** to **Clip-Based Zoom**.

RELATED LINKS
Musical Mode on page 499
Matching Audio to the Project Tempo on page 499
Correcting the Audio Definition Grid on page 502

AudioWarp Section

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.

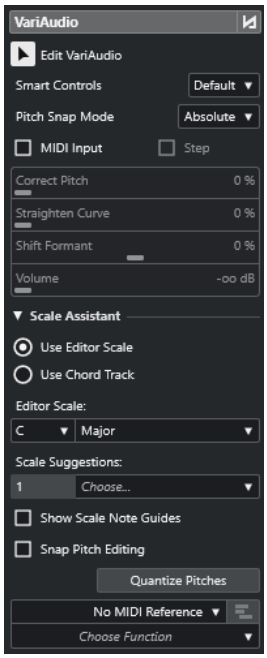
- To open the **AudioWarp** section, click its tab in the **Sample Editor Inspector**.

RELATED LINKS
Tempo Matching Audio on page 498

VariAudio Section

The **VariAudio** section allows you to edit single sounds of your audio file and to change their pitch or timing. Furthermore, you can extract MIDI from your audio.

- To open the **VariAudio** section, click its tab in the **Sample Editor Inspector**.

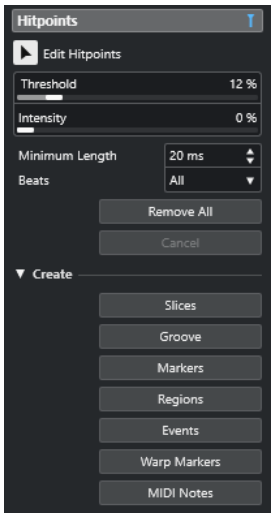


RELATED LINKS
VariAudio Inspector Section on page 508

Hitpoints Section

The **Hitpoints** section allows you to edit hitpoints to slice your audio. Here, you can create groove quantize presets, markers, regions, events, and warp markers based on hitpoints.

- To open the **Hitpoints** section, click its tab in the **Sample Editor Inspector**.

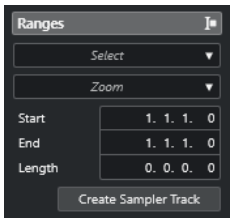


RELATED LINKS
Hitpoints on page 487

Range Section

The **Range** section allows you to edit ranges and selections or to create a sampler track from the selected range.

- To open the **Range** section, click its tab in the **Sample Editor Inspector**.



Select
Opens a pop-up 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 pop-up menu with the zoom functions for ranges.

Create Sampler Track
Allows you to create a sampler track from the range selection.

Select Menu in the Range Section

- To open the **Select** pop-up menu for ranges, click the **Range** tab in the **Sample Editor Inspector**.

The following options 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. If the **VariAudio** section is open and you segmented the audio, all segments that start or end within the event boundaries are selected.

Set Locators to Selection Range
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 to the 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.

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** section in the **Sample Editor Inspector**.
3. Click **Create Sampler Track**.

RESULT

A new **Sampler Track** is created and added to the track list. **Sampler Control** shows the corresponding audio clip. The sample start and the sample end are set to the selected range, or, if you did not select a range, to the start and to the end of the clip.

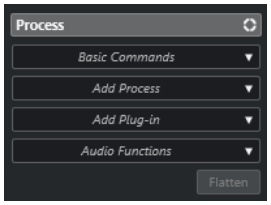
RELATED LINKS

Selecting a Range with the Range Selection Tool on page 471
Range Section on page 476
Sampler Tracks on page 559
Sampler Control on page 561

Process Section

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 **Sample Editor Inspector**.



Basic Commands Menu

The **Basic Commands** pop-up menu in the **Process** section of the **Sample Editor Inspector** allows you to perform basic commands on selection ranges.

- To edit a selection range, open the **Process** section in the **Sample Editor Inspector**, and select one of the **Basic Commands** pop-up 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** to edit all shared copies.

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 of 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.

Make Direct Offline Processing Permanent
Allows you to apply all offline processing permanently to the audio.

RELATED LINKS
Selecting a Range with the Range Selection Tool on page 471
Shared Copies on page 210
Applying Offline Processing Permanently on page 441

Direct Offline Processing for Ranges

You can apply audio processes to selection ranges.

- To apply an audio process to a selection range, open the **Process** section in the **Sample Editor Inspector**, and select one of the options in the **Add Process** menu.

NOTE

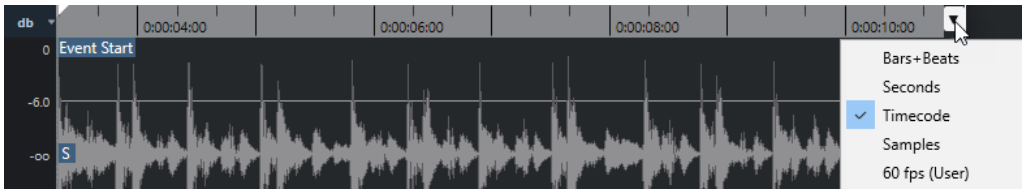
If you apply offline processing to ranges of events that are shared copies, you are asked if you want to create a new version of the clip. Select **New Version** if you want to edit the event. Select **Continue** if all shared copies should be edited.

RELATED LINKS
Selecting a Range with the Range Selection Tool on page 471
Direct Offline Processing on page 435
Applying Processing on page 438
Shared Copies on page 210

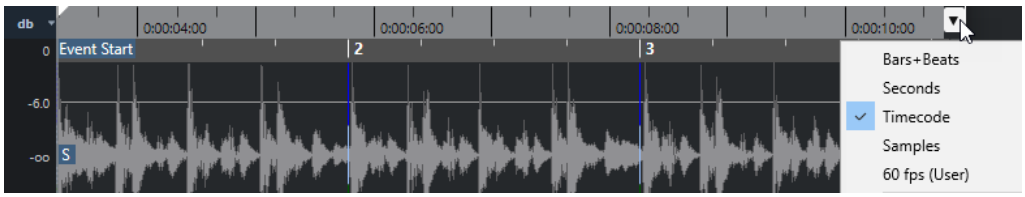
Ruler

The ruler shows the timeline and the display format of the project, the project tempo grid.

The ruler is located above the waveform display. It is always shown.

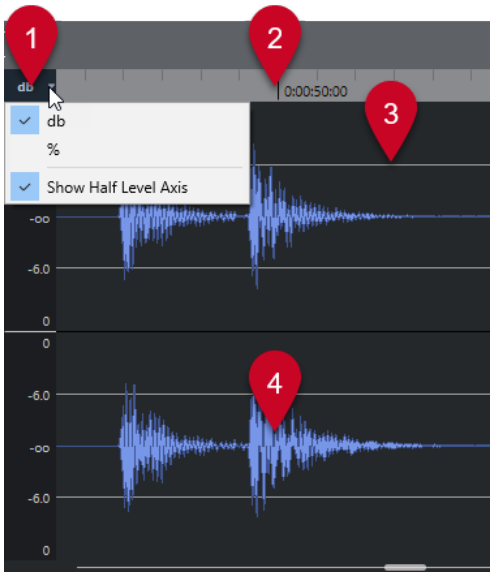


When the **Definition** section is open, an additional ruler is shown below the project tempo grid. It displays the musical structure of the audio file, the audio tempo grid.



Waveform Display

The waveform display shows the waveform image of the edited audio clip.



1 Level Scale menu

Allow you to show the level as a percentage or in dB. Here, you can also activate the display of the half level axis.

2 Ruler

Shows the project tempo grid.

3 Half Level Axis

To show the half level axis, open the level scale menu, and select **Show Half Level Axis**.

4 Audio waveform

Shows the waveform image of the selected audio.

NOTE

You can set up a wave image style in the **Preferences** dialog (**Event Display—Audio** page).

Zooming Vertically

You can zoom in the waveform vertically. This allows you to see a specific detail of the waveform.

PROCEDURE

- Drag the vertical zoom slider down to zoom in or drag it upwards to zoom out.

NOTE

In the **VariAudio** section you can also zoom vertically if you deactivate **Zoom Tool Standard Mode: Horizontal Zooming only** in the **Preferences** dialog (**Editing—Zoom** page) and drag a rectangle with the **Zoom** tool.

RESULT

The vertical scale changes relative to the height of the **Sample Editor**.

Zooming Horizontally

You can zoom in the waveform horizontally. This allows you to zoom in or out on the time scale.

PROCEDURE

- Drag the horizontal zoom slider to the right to zoom in or to the left to zoom out.

RESULT

The horizontal zoom setting is shown on the info line as samples per pixel. You can zoom in horizontally to a scale of less than one sample per pixel. This is required for using the **Draw** tool.

NOTE

- 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** page).

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 according to the **Zoom Mode** in the **Sample Editor**.

- If **Global Zoom** is activated, this function zooms out so that the entire project is visible in the waveform display. The entire project means the timeline from the project start to the length set in the **Project Setup** dialog.
- If **Clip-Based Zoom** or **Auto-Zoom to Event** is activated, this function zooms out so that the entire clip is visible in the waveform display.

Zoom to Selection

Zooms out so that the entire clip is visible in the waveform display. If the **VariAudio** section is open, this 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.

Zoom In On Waveform Vertically

Zooms in on the waveform vertically.

Zoom Out Of Waveform Vertically

Zooms out of the waveform vertically.

Undo/Redo Zoom

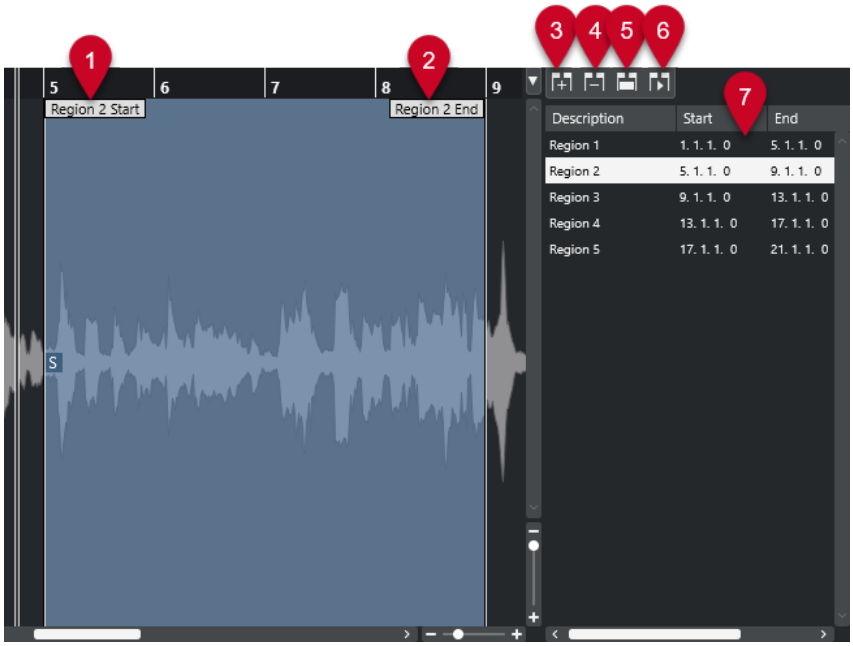
Allows you to undo/redo the last zoom operation.

RELATED LINKS
Zoom Category on page 1112

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**

Shows the start of the region in the audio waveform.

2 **Region End**

Shows the end of the region in the audio waveform.

3 **Add Region**

Allows you to create a region of the current range selection.

4 **Remove Region**

Allows you to remove the selected region.

5 **Select Region**

If you select a region from 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.

6 **Play Region**

Plays back the selected region.

7 **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 you have activated **Regions**.

PROCEDURE

1. On the **Sample Editor** toolbar, activate the **Range Selection** tool.
2. In the waveform display, select the range that you want to convert into a region.
3. 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.

4. 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 495

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 of the **Sample Editor Inspector**, 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 you have activated **Regions**. You have created regions.

PROCEDURE

- Perform one of the following actions:
  - Drag the **Region Start** or **Region End** handle to a different position 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 the info line, but they are relative to the start of the audio clip.

Removing Regions

PREREQUISITE

You have clicked **Set up Window Layout** on the toolbar, and you have activated **Regions**. 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 you have activated **Regions**. 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.

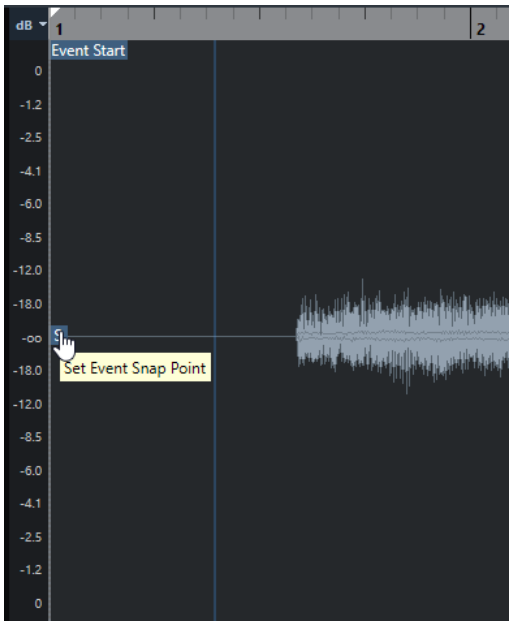
- To show the snap point, select **Show Clips and Events** or **Show Event** as **Editor Display Mode** on the toolbar.

The event snap point is set as follows:

- If you record an audio event, the snap point is set to the next grid position.
- If you bounce a selection, the snap point is set to the start of the new event or to the first snap point that you set manually.
- If you bounce a range selection, the snap point is set to the start of the new event or to the first snap point that you set manually.
- If you freeze an audio event, the snap point is set to the start of the new event or to the first snap point that you set manually.
- If you export audio, the snap point is set to the start of the new audio file.

NOTE

You can move the snap point to any other relevant position in the audio.



The snap point is used when **Snap** is activated 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.

RELATED LINKS
Sample Editor Toolbar on page 465
Adjusting the Snap Point on page 485

Adjusting the Snap Point

PREREQUISITE

The audio event is opened in the **Sample Editor**. **Show Clips and Events** or **Show Event** is selected as **Editor Display Mode** on the toolbar.

PROCEDURE

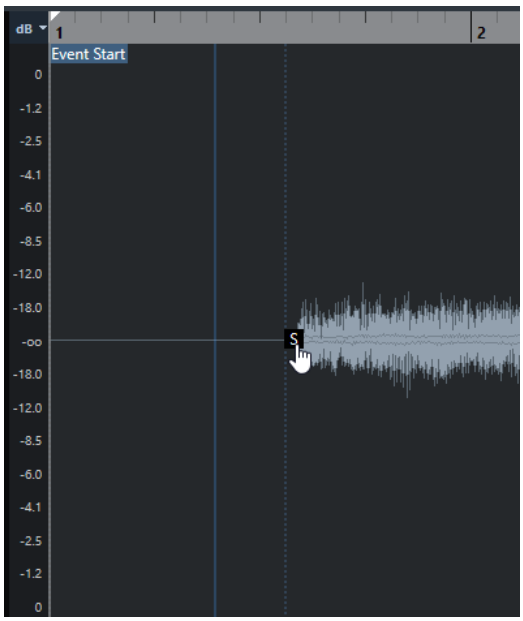
1. Optional: On the **Sample Editor** toolbar, select the **Scrub** tool.
   This allows you to audition the audio while setting the snap point.

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**.

RELATED LINKS

Snap Point on page 484

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 if **Enable Automatic Hitpoint Detection** is activated in the **Preferences** dialog (**Editing—Audio** page).

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 the tempo and the 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 quantize preset is created. You can use this 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.

If the automatic hitpoint detection does not meet your expectations, you can edit hitpoints manually or add additional hitpoints. The following editing operations are available in the **Sample Editor**:

- Locking hitpoints prevents them from being filtered out, regardless of the settings in the **Hitpoints** section. You can lock a hitpoint by pointing at the triangle that represents the hitpoint and clicking on it.
- Disabling hitpoints excludes them from further operations. You can disable a hitpoint that you do not need by pressing **Shift** and clicking on the line that represents the hitpoint.
- You can insert an additional hitpoint by pressing **Alt/Opt** and clicking at the position where you want to insert the hitpoint.

- You can move a hitpoint by moving the mouse pointer on the vertical line that represents the hitpoint and dragging to the left or to the right.

RELATED LINKS
Calculating Hitpoints on page 488
Editing Hitpoints Manually on page 490

Calculating Hitpoints

When you add an audio file to your project by recording or by importing, Cubase can automatically detect hitpoints.

PREREQUISITE

Enable Automatic Hitpoint Detection is activated in the **Preferences** dialog (**Editing—Audio** page).

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 hitpoints calculated for the selected event are shown in the **Project** window.

AFTER COMPLETING THIS TASK

You can manually edit detected hitpoints or add further hitpoints in the **Sample Editor**.

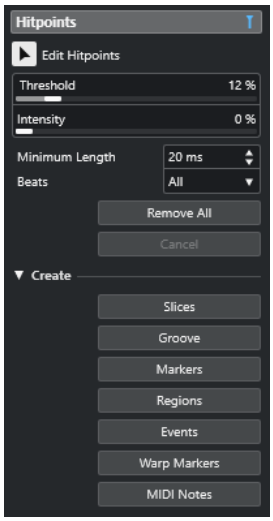
RELATED LINKS
Editing - Audio on page 1129
Editing Hitpoints Manually on page 490

Hitpoint Filters in the Hitpoint Section

Cubase can automatically detect and filter hitpoints.

For the automatic hitpoint detection to work, **Enable Automatic Hitpoint Detection** must be activated in the **Preferences** dialog (**Editing—Audio** page). If the detection result does not meet your expectations, you can adjust the hitpoint filtering manually.

- To filter hitpoints, open the audio event in the **Sample Editor**, and open the **Hitpoints** section.



Main Section

Edit Hitpoints

Allows you to edit hitpoints manually in the event display.

Threshold

Filters hitpoints by their peaks. Drag the slider to the right to discard hitpoints of quieter crosstalk signals, for example.

Intensity

Filters hitpoints by their intensity. Drag the slider to the right to discard less intense hitpoints.

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.

Remove All

Removes all automatically calculated and manually created hitpoints. To restore all automatically calculated hitpoints, click **Edit Hitpoints**.

Create Section

Slices

Creates slices at hitpoint positions.

Groove

Creates a groove quantize preset at hitpoint positions.

Markers

Creates markers at hitpoint positions.

Regions

Creates regions at hitpoint positions.

Events

Creates events at hitpoint positions.

Warp Markers

Creates warp markers at hitpoint positions.

MIDI Notes

Creates MIDI notes at hitpoint positions.

RELATED LINKS

Editing Hitpoints Manually on page 490

Editing Hitpoints Manually

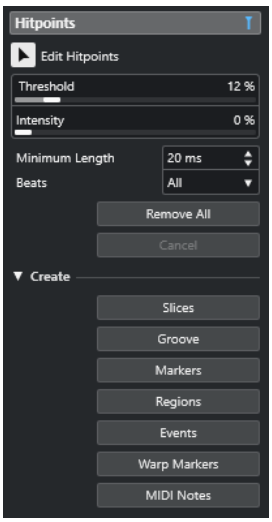
It is crucial for any further editing that the hitpoints are set at the correct positions. Therefore, if the automatic hitpoint detection does not meet your expectations, you can edit hitpoints manually.

PREREQUISITE

The audio event is opened in the **Sample Editor**, and in the **Hitpoints** section, hitpoints are filtered by their peak and/or intensity, by their distance, or by their musical position.

PROCEDURE

1. In the **Hitpoints** section in the **Sample Editor Inspector**, activate the **Edit Hitpoints** tool.

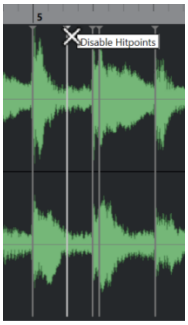


2. Move the mouse to the waveform display, and click between two hitpoints.

   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 Hitpoints** is shown. Disabled hitpoints are not taken into account for further operations.



4. Press **Tab** to navigate to the next slice.

   The slice is played back automatically.

5. To insert a hitpoint, press **Alt/Opt**, 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 the triangle that represents it and clicking on it.

   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/Opt** until the tooltip **Enable/Unlock Hitpoints** is shown, and click on the line that represents the hitpoint.

RELATED LINKS
Hitpoint Filters in the Hitpoint Section on page 488

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 in the **Preferences** dialog (**Editing—Audio** page).

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/Opt** - **N** to navigate to the next hitpoint.
   - Press **Alt/Opt** - **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 the tempo and the 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 the tempo and the 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

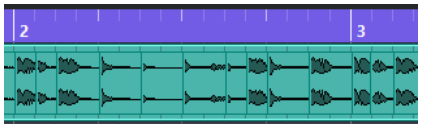
When slicing audio, all events referring to the edited clip are also replaced.

PROCEDURE

- Perform one of the following actions:
  - In the **Hitpoints** section in the **Sample Editor Inspector**, open the **Create** section, and click **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 493
Audio Part Editor on page 541

Slices and the Project Tempo

The project tempo affects how the sliced audio is played back.

RELATED LINKS

Closing Gaps on page 493
Deleting Overlaps on page 494
Musical Mode on page 499
Making Global Auto Fade Settings on page 317
Making Auto Fade Settings for Individual Tracks on page 317

Closing Gaps

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. You can close these gaps so that the audio plays without any breaks.

PROCEDURE

- Do one of the following:
  - Select **Audio** > **Advanced** > **Close Gaps (Time Stretch)** to apply time stretch to each slice and to close the gaps.

    Consider activating auto fades for the corresponding audio track and setting the fade-out to 10 ms to eliminate clicks.
  - Select **Audio** > **Advanced** > **Close Gaps (Crossfade)** to apply crossfades to the slices and to close the gaps.

AFTER COMPLETING THIS TASK

NOTE

If you decide to change the tempo again, undo your actions and use the original, unstretched file.

Deleting Overlaps

If the project tempo is higher than the tempo of the original audio event, the slice events in the part may overlap. You can delete these overlaps.

PROCEDURE

1. Right-click the track in the track list, and from the context menu, select **Auto Fades Settings**.
2. In the **Auto Fades** dialog, activate **Auto Crossfades**.
3. Click **OK**.
4. Select the overlapping events in the part, and select **Audio** > **Advanced** > **Delete Overlaps**.

RESULT

The sound is smoothed out.

Creating a Groove Quantize Preset

You can use hitpoints to create a groove quantize preset.

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 in the **Sample Editor Inspector**, open the **Create** section, and click **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.

RELATED LINKS

Quantize Panel on page 299

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 in the **Sample Editor Inspector**, open the **Create** section, and click **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 337

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 in the **Sample Editor Inspector**, open the **Create** section, and click **Regions**.

RESULT

Regions are created between two hitpoint positions and shown in the **Sample Editor**.

RELATED LINKS

Creating Regions on page 482

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 in the **Sample Editor Inspector**, open the **Create** section, and click **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.
- If you want to create warp markers for all audio events that are opened in the **Sample Editor**, open the **Clip Editing Mode** pane and activate **All Clips**.

PROCEDURE

- In the **Hitpoints** section in the **Inspector**, open the **Create** section, and click **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

Sample Editor Toolbar on page 465
Tempo Matching Audio on page 498

Creating MIDI Notes

You can create MIDI notes from hitpoints. 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 in the **Sample Editor Inspector**, open the **Create** section, and click **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.

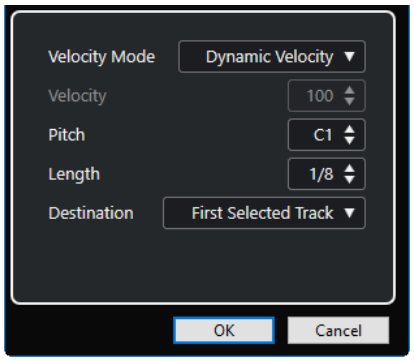
AFTER COMPLETING THIS TASK

Assign a VST instrument to the MIDI track, and select a sound to enrich the audio.

Convert Hitpoints to MIDI Notes Dialog

The **Convert Hitpoints to MIDI Notes** dialog allows you to specify how to convert hitpoints when you create MIDI notes from hitpoints.

- To open the **Convert Hitpoints to MIDI Notes** dialog, open the **Create** section in the **Hitpoints** section of the **Sample Editor Inspector**, and click **MIDI Notes**.



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**.
- If you want to assign the same velocity value to all created MIDI notes, select **Fixed Velocity**.

Velocity

Sets the **Fixed Velocity**.

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

Cubase offers several functions that allow you to match the tempo of the audio in your project.

In the **Sample Editor** window and in the lower zone editor, you can perform the following tempo matching operations:

- **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 the 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.

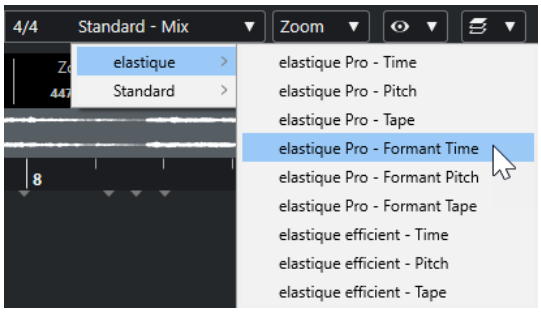
RELATED LINKS
Stretching Audio Events to the Project Tempo on page 499
Musical Mode on page 499
Auto Adjust on page 501
Manual Adjust on page 502
Free Warp on page 503

Algorithm Presets

You can select an algorithm preset that is applied for realtime playback and time stretching.

The **Warping Algorithm for Audio Clip** pop-up menu on the toolbar and in the **Inspector** of the **Sample Editor** 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**. For the VariAudio warping and pitching features, **Standard – Solo** is applied automatically.

RELATED LINKS
Algorithm Presets on page 498
Time Stretch and Pitch Shift Algorithms on page 452

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, in the **Definition** section, and on 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 adapt to the project tempo.

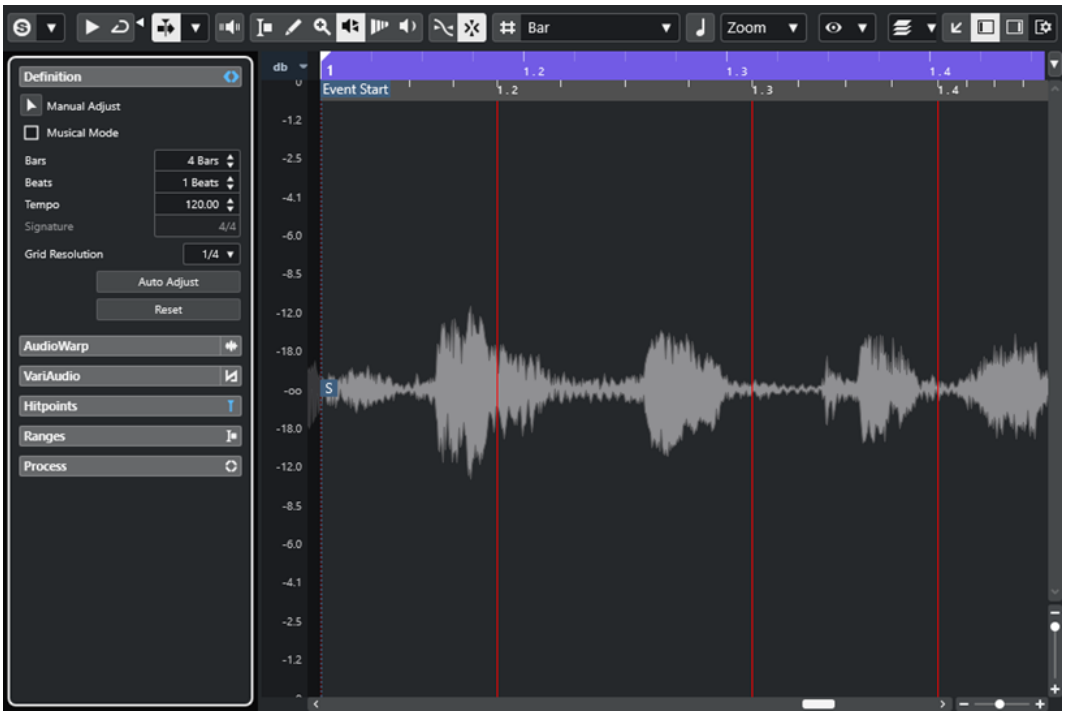
Matching Audio to the Project Tempo

You can use **Musical Mode** to adjust audio loops to the project tempo. Loops are short audio files that have a defined number of bars.

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. In the **Definition** section, 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. In the **AudioWarp** section, select a preset from the **Warping Algorithm for Audio Clip** pop-up menu.
6. Listen to the loop. If necessary, correct the **Bars** and **Beats** values.
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.

RELATED LINKS

Musical Mode on page 499
Definition Section on page 473
Algorithm Presets on page 498

Applying Swing

The **Swing** function allows you to add swing to audio that sounds too straight.

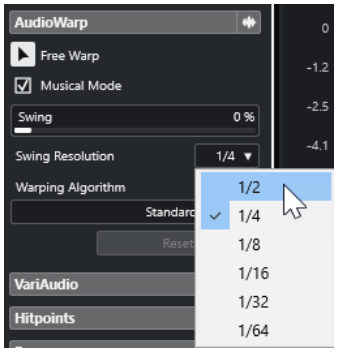
PREREQUISITE

You have opened your audio in the **Sample Editor**, and **Musical Mode** is activated.

PROCEDURE

1. Open the **AudioWarp** section, and select a preset from the **Warping Algorithm** pop-up menu.
2. From the **Swing 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 the beat is not straight. It allows you to extract a definition grid from your audio. After that, you can tempo match the file 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**.

NOTE

For the **Auto Adjust** function to work, the audio must contain hitpoints.

RELATED LINKS

Musical Mode on page 499
Hitpoints on page 487

Extracting a Tempo Definition Grid from Audio

If you have an audio file with an unknown tempo or a beat that is not straight and you want to match it to the project tempo, you must first extract its tempo definition grid. In order to do so, use 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 barline, and contains hitpoints.

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 Resolution** 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 the clip starts and ends on a barline.

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. 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 the tempo of your audio file. This is the case if the extraction of a definition grid with the **Auto Adjust** function did not lead to 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 499

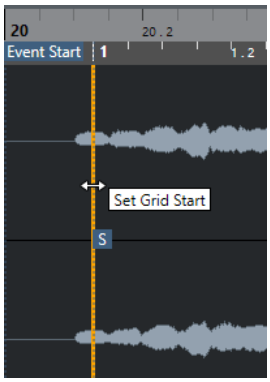
Correcting the Audio Definition Grid

If the extraction of a definition grid with the **Auto Adjust** function did not lead to satisfying results, you can correct the grid and the 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.

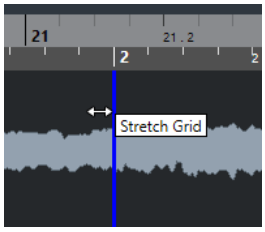
   This matches the grid start and the snap point with the first main beat. The audio tempo definition ruler changes to reflect your edits.

5. In the upper part of the waveform, move the mouse pointer to the vertical line closest 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.

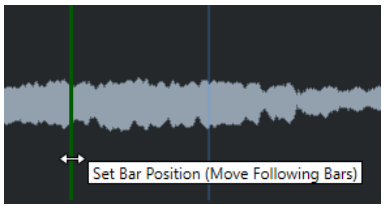


7. In the lower part of the waveform, move the mouse pointer over the grid lines.

   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.

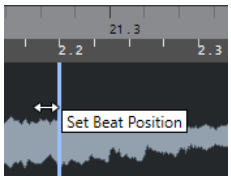
   This also moves the bars to the right. The area to the left remains unaffected.



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.

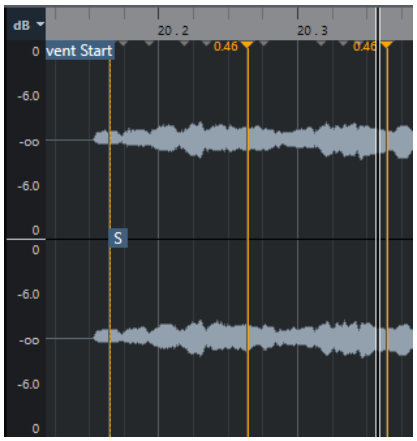
AFTER COMPLETING THIS TASK

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.

RELATED LINKS

Creating Warp Markers for Multiple Audio Events on page 505
Correcting Warp Marker Positions on page 505
Deleting Warp Markers on page 505
Resetting Warp Edits on page 506

Correcting the Timing with the Free Warp Tool in the Sample Editor

PREREQUISITE

You have opened an audio clip or event in the **Sample Editor**.

PROCEDURE

1. On the **Sample Editor** toolbar, activate **Snap to Zero Crossing**.

   If this button is activated, warp markers snap to zero crossings.
2. Optional: If you want to correct the timing of individual positions in the audio, specify the local definition with the **Auto Adjust** or the **Manual Adjust** function, and activate **Musical Mode**.
3. On the **Transport** panel, activate **Click**, and play back the audio to determine positions where the beat is not on time with the click.
4. 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.
5. 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
Sample Editor on page 464
Sample Editor Toolbar on page 465
Manual Adjust on page 502
Musical Mode on page 499

Creating Warp Markers for Multiple Audio Events

PREREQUISITE

You have opened multiple audio clips or events in the **Sample Editor.**

PROCEDURE

1. On the **Sample Editor** toolbar, open the **Clip Editing Mode** pane and activate **All Clips**.
2. In the **AudioWarp** section, activate **Free Warp**, move the mouse pointer to the position of the beat that you want to adjust, click, and hold.
3. Drag the warp marker to the new position, and release the mouse button.

RESULT

The beats are now aligned for all selected events.

Correcting Warp Marker Positions

PROCEDURE

1. In the **AudioWarp** section, activate **Free Warp**.
2. In the **Sample Editor** event display, 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/Opt**, 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 Edits

PROCEDURE

- In the **AudioWarp** section, click **Reset**.

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**.
3. In the **Flatten Realtime Processing** dialog, select an algorithm preset.
4. Click **OK**.

RESULT

Any loop that was previously stretched in realtime plays back in exactly the same way, but the warp markers are discarded.

RELATED LINKS

MPEX on page 453

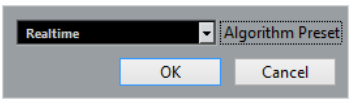
Flatten Realtime Processing Dialog

The **Flatten Realtime Processing** dialog allows you to select an algorithm.

- To open the **Flatten Realtime Processing** dialog, select one or more audio events in the **Project** window, and select **Audio** > **Realtime Processing** > **Flatten Realtime Processing**.

  NOTE

  This option is only available if you have performed warp modifications.



The following options are available:

Algorithm Preset

Allows you to select an algorithm preset.

Unstretching Audio Files

You can remove realtime time stretching from audio events.

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 Time Stretch** 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.

Pitch Editing and Time Correction with VariAudio

The VariAudio features in Cubase allow you to edit pitch, and correct the timing and intonation of individual notes in monophonic vocal recordings.

All VariAudio operations can be performed in the **Sample Editor** window and in the lower zone editor. Any modifications to the audio material can be undone.

NOTE

The VariAudio features are optimized for monophonic recordings of vocals. It may work well for other monophonic recordings, such as a saxophone, as 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 individual notes.

NOTE

Due to the data gained during segmentation, the audio and thus, the size of your project, can increase.

RELATED LINKS
Segmenting Monophonic Audio on page 512
Segments and Gaps on page 511

VariAudio and Offline Processes

If you apply offline processes and edits that affect the length of audio files that contain VariAudio data, existing VariAudio data becomes invalid. We therefore recommend that you apply offline processing or edits before using the VariAudio features.

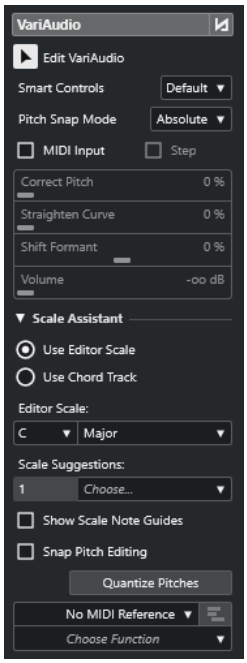
The following processes and edits may lead to the reanalysis of the audio material:

- All offline processes in the **Processes** 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**.

VariAudio Inspector Section

The **VariAudio** section allows you to edit individual notes of your audio file, to change their pitch or timing, and to extract MIDI from your audio.

- To show the **VariAudio** section, open an audio event in the **Sample Editor**, and, in the **Sample Editor Inspector**, open the **VariAudio** section.



Main Section

VariAudio Changes Bypass on/off

Bypasses pitch, formant shift, and volume changes so that you can compare the changes to the original audio.

Edit VariAudio

Activates the audio analysis, splits the audio into segments that are shown in the waveform image, and enables VariAudio editing.

Smart Controls

Allows you to select how many smart controls are shown on the segments. **Show Default Smart Controls** shows frequently used smart controls, while **Show All Smart Controls** shows all smart controls.

Pitch Snap Mode

Allows you to choose how a segment snaps to a specific pitch when you move it with the mouse or the **Up Arrow**/**Down Arrow** keys. When you use the **Quantize Pitches** function in the **Scale Assistant** section, this determines how the segments snap to the pitches of the selected scale.

MIDI Input

Allows you to change the pitch of a segment via MIDI input.

Step

Allows you to change the pitch of a segment via MIDI step input.

Correct Pitch

Allows you to correct the pitch of a segment to the nearest pitch.

Straighten Curve

Allows you to straighten the pitch curve of a segment.

Shift Formant

Allows you to shift the formants of a segment without affecting the pitch or timing.

Volume

Allows you to edit the volume of a segment.

Scale Assistant Section

Use Editor Scale

Allows you to select a scale for the segments in the **Sample Editor** event display.

- **Editor Scale**

  Allows you to select a scale.

- **Scale Suggestions**

  Shows the number of scale suggestions that match the analyzed pitches of the VariAudio note segments. Open the pop-up menu to select one of the suggestions. To receive scale suggestions for specific segments, you must select them. If no segment is selected, the scale suggestions are made for all segments in the event display.

NOTE

The **Scale Assistant** is also available in the **Key Editor**, and the **Editor Scale** is linked. If you select a scale in the **Sample Editor** the same scale is selected in the **Key Editor**, and vice versa.

Use Chord Track

Allows you to use the chord track data as a musical scale.

- **Chord Track Mode**

  Allows you to select whether you want to use the scale events of the chord track, the chord events, or both as a musical scale.

Show Scale Note Guides

Changes the event display background according to the selected scale. Pitches that do not belong to the selected scale are shown with a darker background.

Snap Pitch Editing

Snaps the pitches of the note segments to the selected scale when you add, edit, or move them.

Quantize Pitches

Quantizes the pitches of the selected segments to the nearest pitch of the selected scale.

NOTE

Quantize Pitches takes the **Pitch Snap Mode** into account.

Lower Section

MIDI Reference Track

Allows you to select a MIDI reference track whose events are shown as lines in the event display.

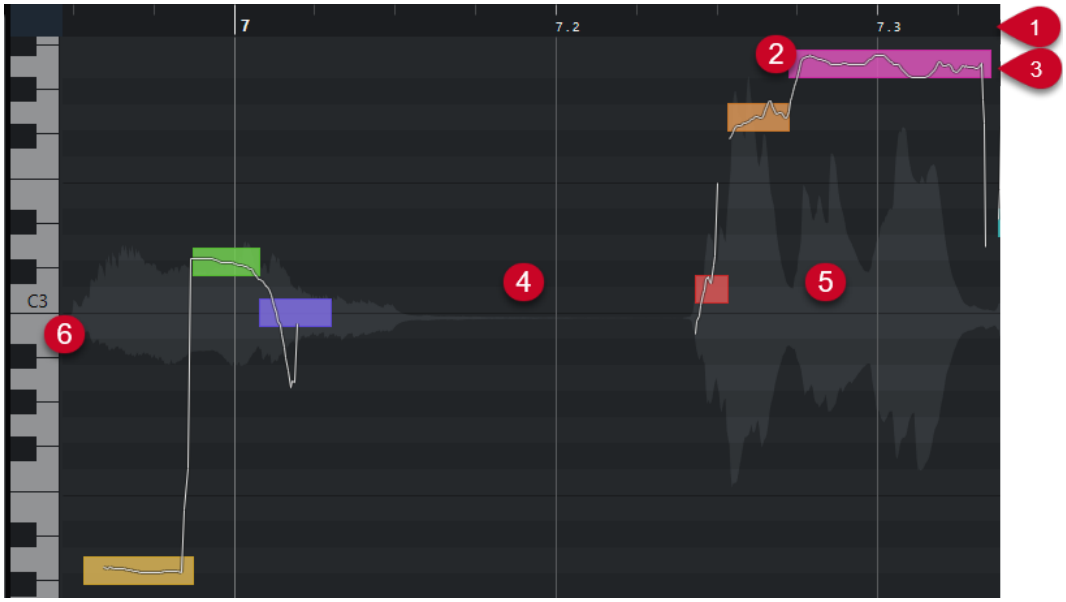
Choose Function

Opens a pop-up menu with other functions.

RELATED LINKS
VariAudio Section on page 474
Smart Controls on page 516
Pitch Snap Mode on page 523
Step Mode on page 525
Correcting Pitches on page 525
Straightening Pitch Curves on page 530
Formant Shifting on page 533
Showing MIDI Reference Tracks on page 532
Editing Volume on page 534
Functions Menu on page 535
Chord Track on page 922
Selecting a Musical Scale for VariAudio Segments on page 520
Using the Chord Track Data as a Musical Scale on page 521
Quantizing Segment Pitches to Musical Scales on page 526
Quantizing Segment Pitches to the Chord Track on page 527
Snapping Segment Pitches While Editing on page 527

Segments and Gaps

Cubase automatically analyzes the audio and splits it into segments.



The following concepts are crucial to understanding the segmentation:

1 **Time Position**

The time position and the length of the segments are indicated by the timeline.

2 **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 with the original audio.

3 **Pitch Curve**

The pitch curves that are shown in the segments represent the progression of the pitch.

4 **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. To do this, you must change the start and the end points of a segment. Otherwise, subsequent pitch modifications affect only the tonal portions.

5 **Audio Waveform**

The audio waveform is always shown as mono, even if you have opened a stereo or multi-channel file.

6 **Pitch Position**

The pitch position of the segments is displayed on the piano keyboard, to the left of the waveform. If you move the mouse pointer over a segment, the pitch of that segment is also shown on the segment. Pitches represent the perceived fundamental frequency of the note. The average pitch of a segment is calculated from its pitch curve.

RELATED LINKS
Changing the Start and End Point of Segments on page 520

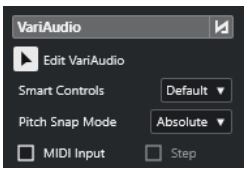
Segmenting Monophonic Audio

To be able to edit the pitch and to correct the timing of monophonic recordings, Cubase must analyze the audio and split it into segments.

PROCEDURE

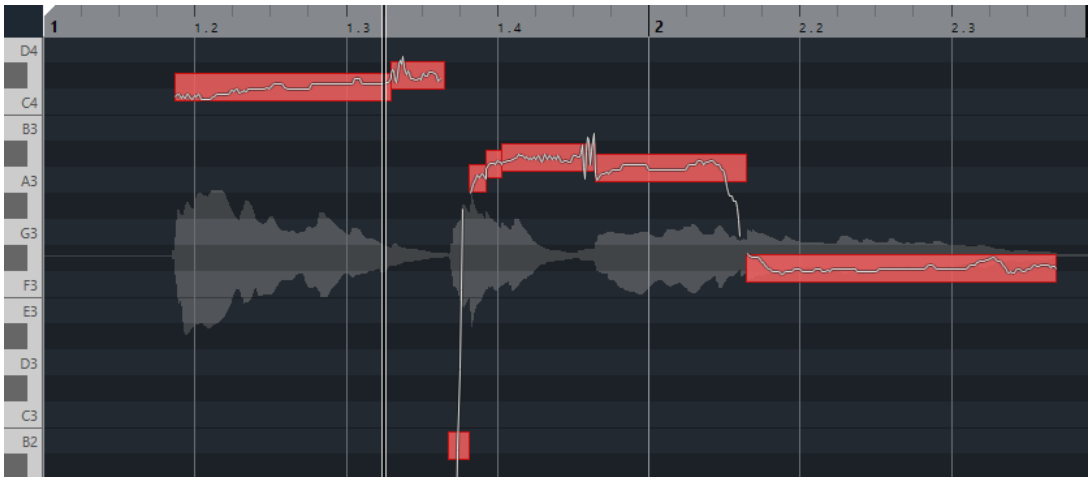
1. In the **Project** window, double-click the monophonic vocal recording to open the **Sample Editor**.
2. In the **Sample Editor Inspector**, click **VariAudio** to open the **VariAudio** section.

   A waveform image of the audio is shown.
3. Activate **Edit VariAudio**.



RESULT

Cubase automatically analyzes the audio and splits it into segments that are shown in the waveform image. The segments allow you to associate the individual notes with their pitch, which is displayed on the piano keyboard to the left, and their duration, which is displayed on the timeline. If you hover the mouse pointer over a segment, the pitch of that segment is shown on the segment.



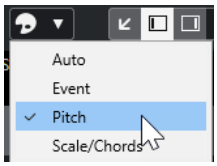
NOTE

The analysis of long audio files may take some time.

RELATED LINKS
Segments and Gaps on page 511

VariAudio Segment Colors Menu

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 voice assume the same color.

Event
Segments assume the same color as the corresponding event in the **Project** window.

Pitch
Segments assume colors depending on their pitches.

Scale/Chords
Segments that match the editor scale, or chord events/scale events on the chord track assume a specific color.

NOTE

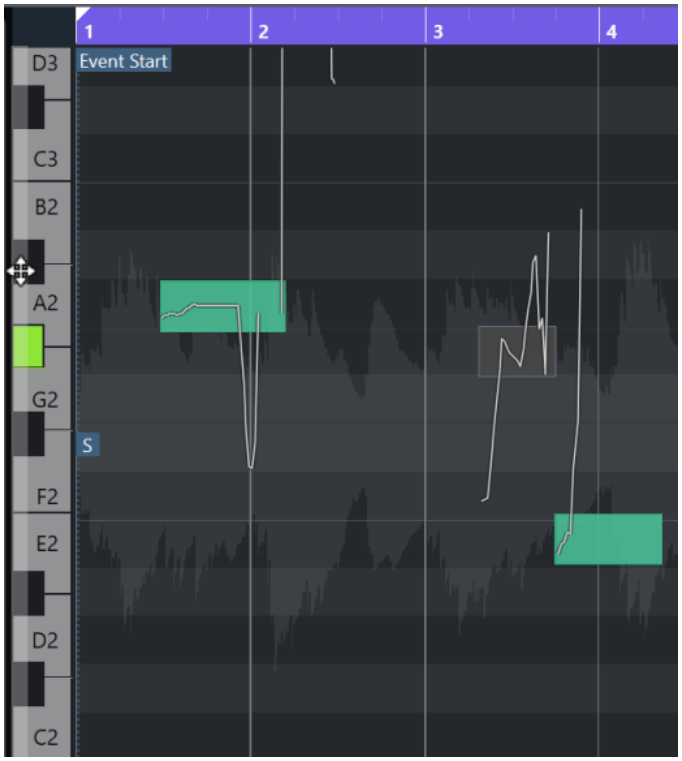
The **Pitch** and **Scale/Chords** options use the same color scheme as the corresponding options in the **Key Editor**. To change the color scheme, use the **Chord and Scale Colors Setup** dialog or the **Pitch Colors Setup** dialog of the **Key Editor**.

RELATED LINKS
VariAudio Inspector Section on page 508

Chord and Scale Colors Setup on page 782
Pitch Colors Setup on page 782
VariAudio Segment Colors Menu on page 513

Sample Editor Piano Keyboard Display

The piano keyboard display is shown to the left of the note display in the **Sample Editor** if you open the **VariAudio Inspector** section.



The piano keyboard gives you a visual orientation over the pitch positions in the event display, helping you to find specific note pitches.

If you move the mouse to the far left of the piano keyboard display, the mouse pointer changes, allowing you to scroll up and down and to zoom in and out of the keyboard display:

- Drag upwards/downwards to scroll up/down in the piano keyboard display.
- Drag to the right/left to zoom in on/out of the piano keyboard display.

The keys show the note names of the corresponding pitches. If you zoom all the way out of the piano keyboard display, only the C keys display the note names.

NOTE

You can change the naming format and the note names of the pitches in the **Pitch Notation** section of the **Preferences** dialog (**Event Display—Chords & Pitches** page). The MIDI note number is only shown at high zoom levels.

If you select note segments in the event display, the corresponding keys on the piano keyboard display are shown in the same color as the segments.

NOTE

You can use the **VariAudio Segment Colors** menu in the **Sample Editor** toolbar to select a color scheme.

If you move the mouse pointer in the event display, the corresponding pitch position on the piano keyboard display is highlighted.

- Hold down **Ctrl/Cmd**, and click a key on the piano keyboard display to select all note segments of that pitch. Note segments that deviate slightly from the exact pitch are taken into account.

RELATED LINKS
Segments and Gaps on page 511
Pitch Notation on page 1136
Navigating and Zooming through Segments on page 515
VariAudio Segment Colors Menu on page 513

Navigating and Zooming through Segments

You can navigate through the segments and zoom in on them.

CHOICES

- 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/Opt**, and draw a selection rectangle.
- To zoom out, hold down **Alt/Opt**, and click in an empty area of the waveform.
- To zoom out to show all segments, hold down **Alt/Opt**, and double-click in an empty area of the waveform.

Auditioning

You can audition the segments one by one or in a loop, or play them back from the beginning to the end.

PROCEDURE

- Do one of the following:
  - Select the segments and activate **Audition**.

    NOTE

    To play back selected segments in a loop, activate **Audition Loop**.
  - Select the **Play** tool, and click the position where you want to start the playback.

RELATED LINKS
Sample Editor Toolbar on page 465

Smart Controls

Each segment has smart controls that allow you to change the start and the end points of the segment and to perform pitch changes, volume editing, formant shifting, and timing modifications of the associated audio.

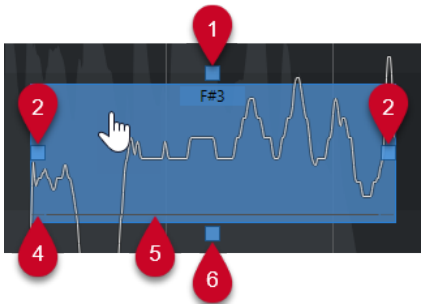
- To show the smart controls on a segment, zoom in on the segment, and move the mouse pointer over it.

  NOTE

  In the **Smart Controls** pop-up menu in the **Sample Editor Inspector**, you can select **Show All Smart Controls** to show all smart controls or **Show Default Smart Controls** to show frequently used smart controls.

Show Default Smart Controls Mode

The following smart controls are available in **Show Default Smart Controls** mode:



1 **Straighten Pitch Curve**

Allows you to straighten the pitch curve. This also works on a selection of segments.

2 **Warp Start/Correct Segment Start**

Allows you to warp the segment start. Press **Alt/Opt** to correct the segment start.

3 **Warp End/Correct Segment End**

Allows you to warp the segment end. Press **Alt/Opt** to correct the segment end.

4 **Glue Segments**

Allows you to glue the segment to the adjacent segment. This also works on a selection of segments.

5 **Split Segment**

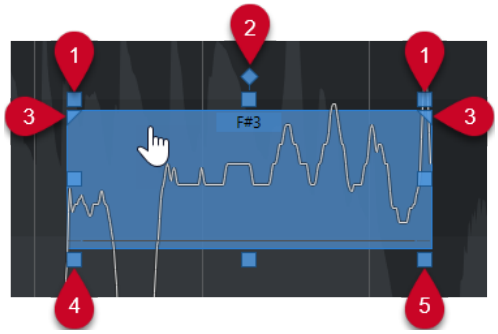
Allows you to split the segment. This also works on a selection of segments.

6 **Correct Pitch**

Allows you to correct the pitch of the segment to the nearest semitone position. This also works on a selection of segments.

Show All Smart Controls Mode

The following additional smart controls are only shown if you select **Show All Smart Controls** in the **Smart Controls** pop-up menu in the **Sample Editor Inspector**:



1 **Tilt**

It allows you to tilt the pitch curve upwards or downwards. The smart control on the left allows you to tilt the start of the curve. The smart control on the right allows you to tilt the end of the curve. Press **Alt/Opt** to rotate the curve around the tilt/rotate anchor.

2 **Set Tilt/Rotate Anchor**

By default, the pitch curve is tilted or rotated around the center of the segment. This smart control allows you to move the anchor to the left or to the right.

3 **Set Range for Straighten Pitch Curve**

By default, the entire pitch curve is straightened. These smart controls allow you to set a range for **Straighten Pitch Curve**. Use this smart control for several selected segments to set the same range for all selected segments.

4 **Shift Formant**

Allows you to shift the formants of the segment. This also works on a selection of segments.

5 **Volume**

Allows you to edit the volume of the segment. To mute a segment, turn the volume down. This also works on a selection of segments.

RELATED LINKS
Navigating and Zooming through Segments on page 515
Tilting a Pitch Curve on page 529
Straightening Pitch Curves on page 530
Pitch Snap Mode on page 523
Warping Segments on page 531
Changing the Start and End Point of Segments on page 520
Splitting Segments on page 518
Gluing Segments on page 519
Correcting Pitches on page 525
Formant Shifting on page 533
Editing Volume on page 534

Segment Editing

Segment editing might be necessary if the original audio contains non-tonal portions of the analyzed audio, that is, signals or sections with unclear pitch information, such as consonants or effect sounds.

Non-tonal portions of the analyzed audio might not be included in a segment. If this is the case, pitch changes, volume editing, formant shifting, or timing modifications affect only the tonal portions. On the other hand, segments can contain unwanted notes or tonal portions.

To prevent this, you can edit the segments manually by using the smart controls.

Segment editing includes:

- Shortening segments by splitting them, or changing their start or end point
- Enlarging segments by gluing them to the next segment, or by changing their start or end point
- Deleting segments

NOTE

Changing the length of a segment may lead to a different average pitch and therefore to a pitch change.

RELATED LINKS
Changing the Start and End Point of Segments on page 520
Splitting Segments on page 518
Gluing Segments on page 519
Deleting Segments on page 519
Segments and Gaps on page 511
Smart Controls on page 516

Splitting Segments

If a segment includes more than one note, you can split it.

PREREQUISITE

You have opened the audio in the **Sample Editor** and activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. Select one or several segments.
2. On the **Sample Editor** toolbar, activate **Audition** to audition the segments.
3. Compare the segments with the pitch curve for each note.
4. If a segment includes more than one note, do one of the following:
   - Use the smart control for **Split Segment** on the bottom edge of the segment, and click.
   - Hold down **Alt/Opt**, and click anywhere above the smart control for **Split Segment**.

RESULT

The segment is split, and the average pitch is recalculated.

NOTE

Splitting a segment may lead to a different average pitch and therefore, to a pitch change.

AFTER COMPLETING THIS TASK

If splitting the segment results in a wrong pitch, move the segment vertically.

RELATED LINKS
Segmenting Monophonic Audio on page 512
Smart Controls on page 516

Gluing Segments

If a single sound is spread over multiple segments, you can glue these segments together.

PREREQUISITE

You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. On the **Sample Editor** toolbar, activate **Audition** to audition the segments.
2. Compare the segments with the pitch curve for each note.
3. Do one of the following:
   - Use the smart control for **Glue Segments** on the bottom left edge of a segment, and click to glue it to the previous segment.
   - Use the smart control for **Glue Segments** on the bottom right edge of a segment, and click to glue it to the next segment.
   - Select several contiguous segments. Use the smart control for **Glue Segments** on the bottom left or right edge of one of the segments, and click to glue the selected segments.

RESULT

The segments are glued together. The average pitch of the segment is recalculated.

RELATED LINKS

Segmenting Monophonic Audio on page 512
Smart Controls on page 516

Deleting Segments

You can delete segments. This is useful if a segment contains only non-tonal portions of the audio and therefore does not require any pitch editing.

PREREQUISITE

You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. Select one or several segments.
2. On the **Sample Editor** toolbar, activate **Audition** to audition the segments.
3. Compare the segments with the pitch curve for each note.
4. Select the segment that you want to delete, and press **Backspace**.

RESULT

The segment is deleted.

RELATED LINKS

Segmenting Monophonic Audio on page 512

Changing the Start and End Point of Segments

If the start or the end point of a segment does not match the associated audio, you can change it.

PREREQUISITE

You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. Select one or several segments.
2. On the **Sample Editor** toolbar, activate **Audition** to audition the segments.
3. Compare the start and the end positions of the segments with the pitch curve.
4. Do one of the following:
   - If a segment starts too early or too late, hold down **Alt/Opt**, move the mouse pointer over the smart control on the middle left corner of the segment, and click and drag to the right or to the left.
   - If a segment ends too early or too late, hold down **Alt/Opt**, move the mouse pointer over the smart control on the middle right corner of the segment, and click and drag to the right or to the left.

   NOTE

   You can only drag the segment start or the segment end up to the boundaries of the next segment. Segments cannot overlap.

RESULT

The start and the 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.

RELATED LINKS

Segmenting Monophonic Audio on page 512
Smart Controls on page 516

Selecting a Musical Scale for VariAudio Segments

The **Scale Assistant** suggests musical scales based on the note segments in the **Sample Editor** event display. You can select one of the suggestions and use it as a basis for further editing your project.

PREREQUISITE

The audio file is segmented. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. Open the **Scale Assistant** section of the **VariAudio Inspector**.
2. Do one of the following:
   - To get scale suggestions for specific note segments only, select the note segments in the event display.
   - To get scale suggestions for all note segments, make sure that no note segment is selected.
3. In the **Scale Assistant** section, activate **Use Editor Scale**.
4. Open the **Scale Suggestions** pop-up menu, and select one of the suggested scales.

RESULT

The selected musical scale is set, and the **Editor Scale** fields change to show the selected musical scale.

NOTE

The **Scale Assistant** is also available in the **Key Editor**, and the **Editor Scale** is linked. If you select a musical scale in the **Sample Editor**, the same musical scale is selected in the **Key Editor**, and vice versa.

AFTER COMPLETING THIS TASK

- Activate **Show Scale Note Guides** to change the event display background according to the selected musical scale. Pitches that do not belong to the selected musical scale are shown with a darker background.
- On the **Sample Editor** toolbar, set **VariAudio Segment Colors** to **Scale/Chords**. This changes the colors of the segments in the event display according to whether or not the pitches match the selected musical scale.

RELATED LINKS

Segmenting Monophonic Audio on page 512
VariAudio Inspector Section on page 508
VariAudio Segment Colors Menu on page 513
Quantizing Segment Pitches to Musical Scales on page 526
Scale Assistant in the Key Editor on page 825
Snapping Segment Pitches While Editing on page 527
Chord and Scale Colors Setup on page 782

Using the Chord Track Data as a Musical Scale

The **Scale Assistant** can use the chord track data as a musical scale.

PREREQUISITE

- You have added a chord track with chord events to your project.
- The audio file is segmented. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. Open the **Scale Assistant** section of the **VariAudio Inspector**.

2. Activate **Use Chord Track**.
3. Open the **Chord Track Mode** pop-up menu, and select whether you want to use chord events, scale events, or both as a musical scale.

RESULT

The **Chord Track Mode** is set.

NOTE

The **Scale Assistant** is also available in the **Key Editor**, and the **Editor Scale** is linked. If you select a **Chord Track Mode** in the **Sample Editor**, the same mode is selected in the **Key Editor**, and vice versa.

AFTER COMPLETING THIS TASK

- Activate **Show Scale Note Guides** to change the event display background according to the selected **Chord Track Mode**. Pitches that do not match the current chord or scale event on the chord track are shown with a darker background.
- On the **Sample Editor** toolbar, set **VariAudio Segment Colors** to **Scale/Chords**. This changes the colors of the segments in the event display according to whether or not the pitches match the current chord event/scale event on the chord track.

RELATED LINKS

Segmenting Monophonic Audio on page 512
VariAudio Inspector Section on page 508
VariAudio Segment Colors Menu on page 513
Quantizing Segment Pitches to Musical Scales on page 526
Scale Assistant in the Key Editor on page 825

Pitch Changes

You can change the pitch of audio segments for corrective or creative purposes. By changing note pitches, you can change the melody of the original audio.

Pitch changes include the following:

- Raising or lowering pitches
- Quantizing pitches
- Changing the pitch curve
- Straightening pitches
- Quantizing segment pitches to musical scales
- Quantizing segment pitches to the chord track

To change the pitch of audio segments, you can use the **VariAudio** section in the **Sample Editor Inspector** or the smart controls.

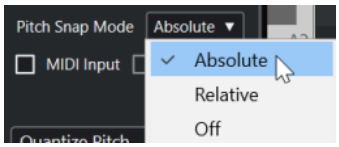
RELATED LINKS

VariAudio Inspector Section on page 508
Smart Controls on page 516

Pitch Snap Mode

The **Pitch Snap Mode** defines how a segment snaps to a certain pitch.

- You can set the **Pitch Snap Mode** in the **VariAudio** section of the **Sample Editor Inspector**.



The following modes are available:

Absolute

Segments snap to the next semitone.

Relative

Segments snap to the next semitone, but they keep their original deviation in cents, if available.

Off

Segments do not snap, and you can edit the pitch freely.

NOTE

You can also assign a key command to swiitch the **Pitch Snap Mode** on and off.

Raising or Lowering Pitches

You can raise or lower the pitch of one or several segments.

PREREQUISITE

The audio file is segmented, and the segments are correct. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. Optional: Activate **Acoustic Feedback** to audition pitch modifications while editing.
2. Select one or several segments, and move the mouse pointer over them.

   The mouse pointer becomes a hand symbol.

   NOTE

   If you hold down **Shift** and double-click a segment, all following segments of the same pitch are selected.

3. Do one of the following:
   - Drag the segment up or down and release the mouse, or use the **Up Arrow** / **Down Arrow** keys to take the **Pitch Snap Mode** setting into account.
   - Hold down **Shift** while using the **Up Arrow** / **Down Arrow** keys to change the pitch in cent steps, and ignore the **Pitch Snap Mode**.

   NOTE

   You can change the **Pitch Snap Mode** on the fly. Use **Shift** to enter **Off** mode, **Ctrl/Cmd** to enter **Absolute** mode, or **Alt** to enter **Relative** mode.

RESULT

The **Solo** algorithm is selected automatically, and the segment pitch is raised or lowered according to your settings.

NOTE

The more the pitch deviates from the original pitch, the less likely it is that your audio sounds natural.

AFTER COMPLETING THIS TASK

To compare your pitch changes to the original audio pitches, activate **VariAudio Changes Bypass on/off** in the **VariAudio** section.

RELATED LINKS

Select Submenu on page 196

Changing Pitches using MIDI Input

You can change the pitches of one or several selected segments by pressing a key on your MIDI keyboard or by using the **On-Screen Keyboard**.

PREREQUISITE

The audio file is segmented, and the segments are correct. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section. You have connected and set up a MIDI keyboard.

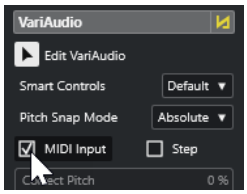
PROCEDURE

1. Select one or several segments.

   NOTE

   If you hold down **Shift** and double-click a segment, all following segments of the same pitch are selected.

2. In the **VariAudio** section, activate **MIDI Input**.

3. Do one of the following to change the pitch:
   - Press a key on your MIDI keyboard.
   - Use the **On-Screen 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 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. 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

On-Screen Keyboard on page 261
Pitch Snap Mode on page 523

Step Mode

The **MIDI Input** function allows you to assign MIDI notes in still mode. If you want to step through the segments while changing their pitches, you can activate **Step** mode.

Step mode allows you to work in a more creative way. You can, for example, 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

Inserting Note Events via Step Input on page 843

Correcting Pitches

You can correct the pitch of segments to the nearest semitone position.

PREREQUISITE

The audio file is segmented. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

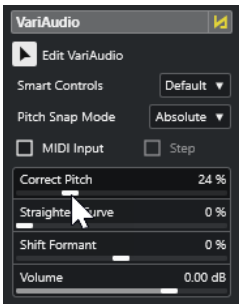
PROCEDURE

1. Select one or several segments.

   NOTE

   If you hold down **Shift** and double-click a segment, all following segments of the same pitch are selected.

2. In the **VariAudio** section of the **Sample Editor Inspector**, move the **Correct Pitch** slider to the right.



NOTE

You can also correct the pitch by dragging the **Correct Pitch** smart control in the middle of the bottom edge of the segment upwards or downwards.

RESULT

The **Solo** algorithm is selected automatically, and the segment pitches are corrected.

NOTE

In the **Sample Editor** category of the **Key Commands** dialog, you can set up a key command for **Correct Pitch**. If you use the key command, the segments are immediately quantized to the next semitone position.

RELATED LINKS

Key Commands on page 1094
Smart Controls on page 516

Quantizing Segment Pitches to Musical Scales

You can quantize the pitches of specific note segments to a musical scale that you set up for a track, either in the **Sample Editor** or in the **Key Editor**.

PREREQUISITE

- The audio file is segmented. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.
- The **Scale Assistant** is set to **Use Editor Scale**, and you have chosen a musical scale based on the suggestions of the **Scale Assistant**, either in the **Sample Editor** or in the **Key Editor**.

PROCEDURE

1. Open the **Pitch Snap Mode** pop-up menu, and select an option to define how the segments snap to the pitches of the scale.
2. In the event display, select the note segments whose pitches you want to quantize to the selected scale.
3. Click **Quantize Pitches**.

RESULT

The note segments are quantized to the nearest pitches of the scale. The **Pitch Snap Mode** is taken into account.

RELATED LINKS
Pitch Snap Mode on page 523
Segmenting Monophonic Audio on page 512
VariAudio Inspector Section on page 508
VariAudio Segment Colors Menu on page 513
Selecting a Musical Scale for VariAudio Segments on page 520
Quantizing MIDI Note Pitches to Musical Scales on page 833
Snapping Segment Pitches While Editing on page 527

Quantizing Segment Pitches to the Chord Track

You can quantize the pitches of specific note segments to the scale defined by chord events or scale events on the chord track.

PREREQUISITE

- In the **Project** window, you have added a chord track and chord events.
- The audio file is segmented.
- You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.
- The **Scale Assistant** is set to **Use Chord Track**, and you have selected a **Chord Track Mode**.

PROCEDURE

1. Open the **Pitch Snap Mode** pop-up menu, and select an option to define how the segments snap to the pitches of the scale.
2. In the event display, select the note segments whose pitches you want to quantize to the selected **Chord Track Mode**.
3. Click **Quantize Pitches**.

RESULT

Any pitches that do not match the pitches of the current chord or scale event on the chord track are quantized to the nearest pitches.

RELATED LINKS
Pitch Snap Mode on page 523
Segmenting Monophonic Audio on page 512
VariAudio Inspector Section on page 508
VariAudio Segment Colors Menu on page 513
Using the Chord Track Data as a Musical Scale on page 521
Chord Track on page 922
Using the Chord Track to Match Note Events to a Musical Scale on page 832
Snapping Segment Pitches While Editing on page 527

Snapping Segment Pitches While Editing

You can snap the pitches of note segments to a musical scale while editing. This is useful if you want to use a musical scale for your VariAudio pitch changes.

PREREQUISITE

- The audio file is segmented.

- You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.
- The **Scale Assistant** is either set to **Use Editor Scale**, and you have chosen a scale suggestion, or it is set to **Use Chord Track**, and you have activated a **Chord Track Mode**.

PROCEDURE

1. Open the **Pitch Snap Mode** pop-up menu, and select an option to define how the segments snap to the pitches of the scale.
2. Activate **Snap Pitch Editing** to snap the pitches of the note segments to the selected musical scale when you move them.
3. In the event display, move the note segments to the desired pitches.

RESULT

The note segments snap to the nearest pitches of the scale. The **Pitch Snap Mode** is taken into account.

RELATED LINKS

VariAudio Inspector Section on page 508
Selecting a Musical Scale for VariAudio Segments on page 520
Pitch Snap Mode on page 523

Pitch Curve Changes

You can perform more detailed editing on the audio by modifying the pitch curves inside the segments.

IMPORTANT

The pitch curve displays the progression of the pitch for the tonal portion of the audio segment. For non-tonal portions of the audio, pitch curves cannot be shown.

Changes of the pitch curve include the following tasks:

- Tilting the pitch curve

  This allows you to correct pitch deviations for individual segments. These include deviations from the tonal center.
- Rotating the pitch curve

  This allows you to correct pitch deviations for individual segments. These include deviations from the tonal center.
- Straightening the pitch curve

  This allows you to reduce the degree of fluctuation or vibrato for individual segments.

RELATED LINKS

Setting Tilt/Rotate Anchors on page 529
Tilting a Pitch Curve on page 529
Rotating a Pitch Curve on page 530
Straightening Pitch Curves on page 530
Straightening Ranges of Pitch Curves on page 531

Setting Tilt/Rotate Anchors

By default, the reference or anchor point for tilting and rotating pitch curves is set to the center of the segment. For a different result, you can move that reference point to the left or to the right.

PREREQUISITE

The audio file is segmented, and the segments are correct. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. In the **Sample Editor Inspector**, open the **Smart Controls** pop-up menu, and select **Show All Smart Controls**.
2. Drag the smart control for **Set Tilt/Rotate Anchor** in the center of the upper edge of the segment to the left or to the right.

RESULT

The anchor is set to the position where you released the mouse button, and it is used as a reference point when you tilt or rotate the pitch curve.

AFTER COMPLETING THIS TASK

To reset the anchor, hold down **Alt/Opt**, and click the smart control for **Set Tilt/Rotate Anchor**.

RELATED LINKS

Smart Controls on page 516
Tilting a Pitch Curve on page 529
Rotating a Pitch Curve on page 530

Tilting a Pitch Curve

You can tilt the start or the end of a pitch curve. This allows you to correct pitch deviations for a segment.

PREREQUISITE

The audio file is segmented, and the segments are correct. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. In the **Sample Editor Inspector**, open the **Smart Controls** pop-up menu, and select **Show All Smart Controls**.
2. Optional: Move **Set Tilt/Rotate Anchor** to the left or to the right to adjust the reference point for tilting.
3. Do one of the following:
   - To tilt the start of the curve, drag the smart control for **Tilt** in the upper left corner of the segment upwards or downwards.
   - To tilt the end of the curve, drag the smart control for **Tilt** in the upper right corner of the segment upwards or downwards.

RESULT

The **Solo** algorithm is selected automatically, and the pitch curve is tilted according to your settings.

RELATED LINKS
Smart Controls on page 516
Setting Tilt/Rotate Anchors on page 529

Rotating a Pitch Curve

You can rotate the pitch curve to correct pitch deviations of individual segments.

PREREQUISITE

The audio file is segmented, and the segments are correct. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. In the **Sample Editor Inspector**, open the **Smart Controls** pop-up menu, and select **Show All Smart Controls**.
2. Optional: Move **Set Tilt/Rotate Anchor** to the left or to the right to adjust the reference point for the rotation.

   If you do not move the anchor, the pitch curve is rotated around the center of the segment.
3. Press **Alt/Opt**, and drag the smart control for **Tilt** in the upper left or the upper right corner of the segment upwards or downwards.

RESULT

The **Solo** algorithm is selected automatically, and the pitch curve is rotated around the anchor.

RELATED LINKS
Setting Tilt/Rotate Anchors on page 529

Straightening Pitch Curves

You can straighten pitch curves to compensate for the rise and fall in pitch, 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 you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. Select one or several segments.

   NOTE

   If you hold down **Shift** and double-click a segment, all following segments of the same pitch are selected.
2. Do one of the following:
   - Drag the smart control for **Straighten Pitch Curve** in the center of the upper edge of a segment upwards or downwards.
   - In the **Sample Editor Inspector**, move the **Straighten Curve** slider to the right.

RESULT

The **Solo** algorithm is selected automatically, and the pitch curves are straightened.

RELATED LINKS
Smart Controls on page 516
Straightening Ranges of Pitch Curves on page 531

Straightening Ranges of Pitch Curves

You can restrict the straightening of pitch curves to specific ranges of segments. This allows you to straighten the pitch of segments while preserving a natural transition between the segments.

PREREQUISITE

The audio file is segmented, and the segments are correct. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. In the **Sample Editor Inspector**, open the **Smart Controls** pop-up menu, and select **Show All Smart Controls**.
2. Drag the smart control for **Set Range for Straighten Pitch Curve** in the upper left corner of the segment to the right to set the start of the range.
3. Drag the smart control for **Set Range for Straighten Pitch Curve** in the upper right corner of the segment to the left to set the end of the range.
4. Drag the smart control for **Straighten Pitch Curve** in the center of the upper edge of the segment upwards or downwards.

RESULT

Only the defined range of the pitch curve is straightened. The **Solo** algorithm is selected automatically.

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 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**.

To modify the timing of audio segments, you can use the **VariAudio** section in the **Sample Editor Inspector** or the smart controls.

RELATED LINKS
VariAudio Inspector Section on page 508
Smart Controls on page 516

Warping Segments

PREREQUISITE

The audio file is segmented, and the segments are correct. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

- Do one of the following:
  - Drag the smart control for **Warp Start** to the left or to the right.

- Drag the smart control for **Warp End** to the left or to the right.

RESULT

The **Solo** algorithm is selected automatically. The timing of the segment and the adjacent segments is changed according to your settings. Warp markers are shown below the ruler 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**.

AFTER COMPLETING THIS TASK

To compare your warp changes to the original timing of the audio, activate **Warp Changes Bypass on/off** in the **AudioWarp** section.

RELATED LINKS

Smart Controls on page 516
Correcting Warp Marker Positions on page 505
Deleting Warp Markers on page 505

Showing MIDI Reference Tracks

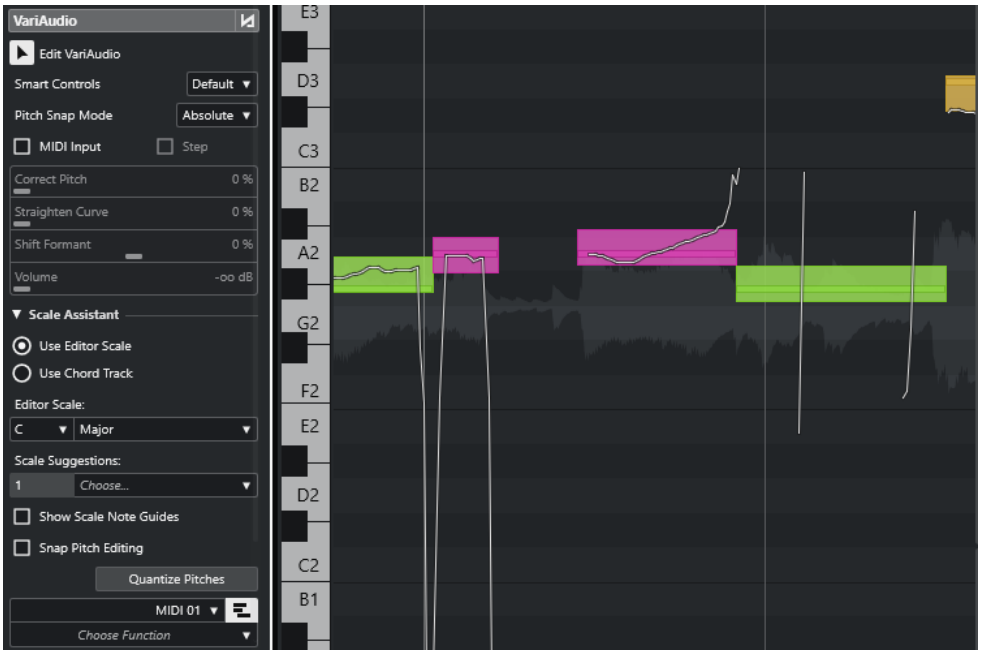
You can use a MIDI track as a reference for your pitch and timing corrections.

PREREQUISITE

- The audio file is segmented, and the segments are correct. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.
- Your MIDI track contains a MIDI part with MIDI events that make up a melody that you want to use as a reference for your audio.

PROCEDURE

- In the **VariAudio** section of the **Sample Editor Inspector**, open the **Select MIDI Reference Track** pop-up menu, and select the MIDI track that you want to use as a reference for your audio.



RESULT

The events of the selected MIDI track are shown as lines in the **Sample Editor** event display. Their color adapts to the **VariAudio Segment Colors** setting. You can use the **Pitch** or the **Scale/Chords** option, for example, to associate the pitches of audio and MIDI.

The MIDI reference track selection applies to all **Sample Editors** in a project. It is saved with the project.

NOTE

- You cannot edit MIDI data that is shown from within the **Sample Editor**.
- You cannot show MIDI reference tracks if you have opened the **Sample Editor** from the **Pool**.

AFTER COMPLETING THIS TASK

To hide the MIDI reference track from the **Sample Editor** event display, deactivate **Show MIDI Reference Track**.

RELATED LINKS

VariAudio Segment Colors Menu on page 513

Formant Shifting

Formants are the harmonic frequencies that occur in the human voice. They define the timbre and alter the perception of how a vocal is performed (more from the diaphragm than from the throat, for example). Formant shifting does not affect the pitch or the timing of a segment.

PREREQUISITE

The audio file is segmented, and the segments are correct. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. Select one or several segments.

2. In the **VariAudio** section of the **Sample Editor Inspector**, move the **Shift Formant** slider to the left or to the right.

   You can set positive and negative percentages. 0 leaves the original unaffected.

   NOTE

   If **Smart Controls** is set to **Show All Smart Controls**, you can also shift the formant by dragging the smart control in the lower left corner of the segment upwards or downwards.

RESULT

The **Solo** algorithm is selected automatically, and the formant is shifted.

RELATED LINKS

Smart Controls on page 516

Editing Volume

You can raise, lower, or mute the volume of the audio for a segment.

PREREQUISITE

- The audio file is segmented, and the segments are correct. You have opened the audio in the **Sample Editor**, and you have activated **Edit VariAudio** in the **VariAudio** section.
- You have selected **Show All Smart Controls** from the **Smart Controls** pop-up menu in the **Sample Editor Inspector**.

PROCEDURE

- Do one of the following:
  - Drag the smart control for **Volume** in the lower right corner of the segment upwards or downwards.
  - In the **VariAudio** section of the **Sample Editor Inspector**, drag the **Volume** slider to the left or right.

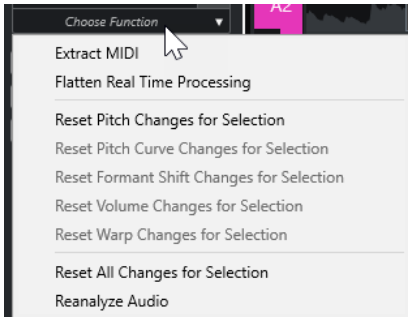
  NOTE

  To mute a segment, turn down the volume, or select the segment and **Edit** > **Mute**.

RESULT

The volume of the segment is changed.

Functions Menu



Extract MIDI

Opens the **Extract MIDI** dialog that allows you to specify which audio data to use to create a MIDI part. The entire audio event is taken into account.

Flatten Realtime Processing

Opens the **Flatten Realtime Processing** dialog that allows you to select an algorithm preset for the flattening of VariAudio and warp modifications. The entire audio event is taken into account.

Reset Pitch Changes/Reset Pitch Changes for Selection

Resets all segment pitches. If you select specific segments, only their pitches are reset.

Reset Pitch Curve Changes/Reset Pitch Curve Changes for Selection

Resets all pitch curves. If you select specific segments, only their pitch curves are reset.

Reset Formant Shift Changes/Reset Formant Shift Changes for Selection

Resets all formant shift changes. If you select specific segments, only their formant shift changes are reset.

Reset Volume Changes/Reset Volume Changes for Selection

Resets all volume changes. If you select specific segments, only their volume changes are reset.

Reset Warp Changes/Reset Warp Changes for Selection

Resets all warp changes. If you select specific segments, only their warp changes are reset.

Reset All Changes/Reset All Changes for Selection

Resets all changes. If you select specific segments, only their changes are reset.

Reanalyze Audio

Resets the segmentation and reanalyzes the entire audio event.

RELATED LINKS

Extract MIDI Dialog on page 536
Generating Harmony Voices for Monophonic Audio on page 539
Flattening Realtime Processing on page 538

Extracting MIDI from Audio

You can create a MIDI part from specific data of your audio. This is useful if you want to copy the tune and the 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 you have activated **Edit VariAudio** in the **VariAudio** section.

PROCEDURE

1. In the **VariAudio** section, open the **Functions** menu, and select **Extract MIDI**.
2. In the **Extract MIDI** dialog that opens, make your changes and click **OK**.

RESULT

A MIDI part is created according to your settings.

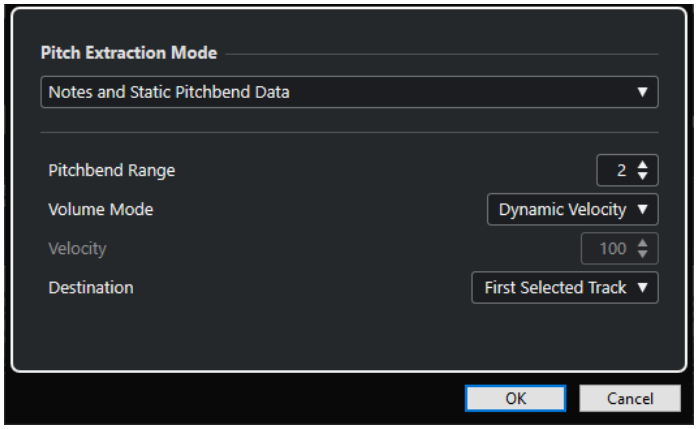
RELATED LINKS

Segmenting Monophonic Audio on page 512
Extract MIDI Dialog on page 536

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 **Edit VariAudio** in the **VariAudio** section, and, in the **Functions** menu, click **Extract MIDI**.



The following pop-up menus are available:

Pitch Extraction 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 MIDI 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 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

Notes and NoteExp VST 3 Tuning Curve

Extracts VST 3 events for the **Tuning** parameter. They are created as Note Expression data for the resulting MIDI notes.

NOTE

This only works with a connected VST instrument that is compatible with Note Expression.

Volume Mode

Allows you to specify how to extract volume information from the audio. The following options are available:

Fixed Velocity

Assigns the same velocity to all MIDI notes. In the **Velocity** field, you can specify a velocity value.

Dynamic Velocity

Assigns an individual velocity value to each 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 only works 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. Any MIDI parts from previous extractions 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 open 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.

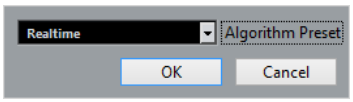
Flattening Realtime Processing

You can flatten VariAudio and AudioWarp 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. Optional: Select the segments that you want to flatten.

   If you do not select anything, all segments are flattened.
2. In the **VariAudio** section, open the **Functions** menu, and select **Flatten Realtime Processing**.
3. In the **Flatten Realtime Processing** dialog, select an algorithm preset.

   NOTE

   - For time stretch factors between 0.5 and 2, you can choose **Realtime** or **MPEX** as an algorithm preset. For other time stretch factors, **Realtime** is automatically set.
   - **MPEX** algorithms are not supported on Apple silicon-based computers.
4. Click **OK**.

RESULT

Any loop that was previously pitch shifted plays back exactly the same as before, but **Musical Mode** is deactivated, and VariAudio data, such as pitch changes, volume editing, and formant shifting, is lost.

Harmony Voices for Audio

Cubase allows you to quickly create harmonies for monophonic audio material.

You have the following options:

- You can let 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.

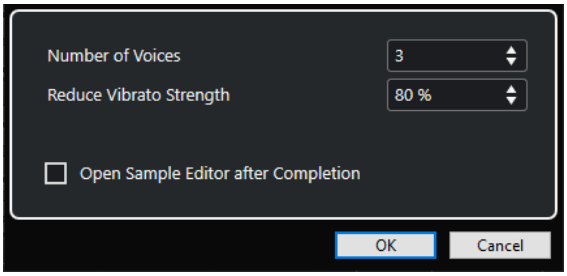
If you use the function without a chord track, the voices are distributed by default. If you create a chord track with some chords and set the original track to follow the chord track in **Single Voice** mode, the harmony voices are distributed according to the chord voicing.

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 new 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 VariAudio segments generated for 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.

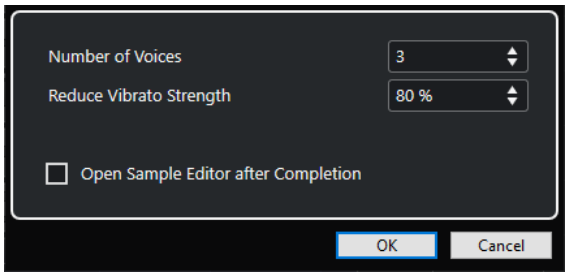
RELATED LINKS

Adding the Chord Track on page 922

Generate Harmony Voices Dialog

The **Generate Harmony Voices** dialog allows you to quickly create harmonies for monophonic audio material.

- To open the **Generate Harmony Voices** dialog, select an audio event in the **Project** window, and select **Audio** > **Generate Harmony Voices**.



The following options are available:

Number of Voices

Allows you to select the number of voices to be generated. You can generate up to 4 voices.

Reduce Vibrato Strength

Allows you to set a value for the vibrato reduction.

Open Sample Editor after Completion

Opens the generated voices with the original audio event in the **Sample Editor**.

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.

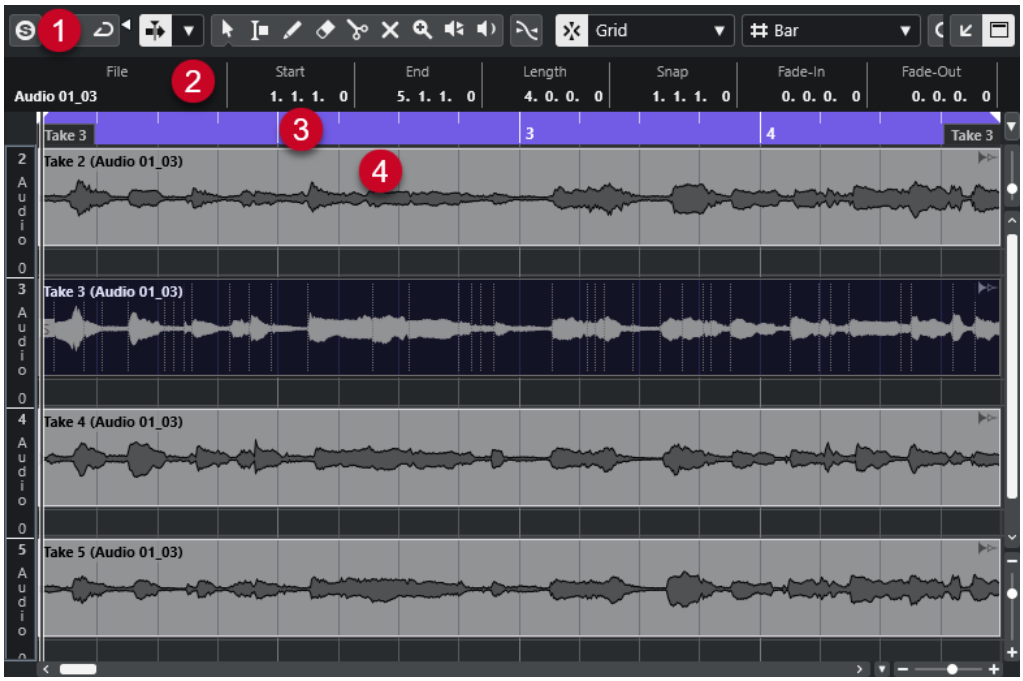
To open an audio part in the **Audio Part Editor**, do one of the following:

- 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. Specify if you want the **Audio Part Editor** to open in a separate window or in the lower zone of the **Project** window.

The **Audio Part Editor**



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.

4 **Part Display**

Shows the waveform images of the audio parts.

RELATED LINKS
Opening the Editor in the Lower Zone on page 66
Opening the Editor Inspector on page 56
Ruler on page 48
Info Line on page 51
Audio Part Editor Toolbar on page 542
Audio Parts on page 193

Audio Part Editor 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.

Solo Editor Mode

Allows you to select a mode for the **Solo Editor** function.

- **Solo All Parts** uses all parts in the editor display.
- **Solo follows 'Part Editing Mode'** uses only the parts specified via the **Part Editing Mode**.

Left Divider

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.

Select Auto-Scroll Settings

Allows you to activate **Page Scroll** or **Stationary Cursor** and to activate **Suspend Auto-Scroll When Editing**.

Preview

Audition

Plays back the selected audio.

Audition Loop

Loops the playback until you deactivate **Audition**.

Audition Volume

Allows you to adjust the volume.

Tool Buttons

Combine Selection Tools

Combines the **Object Selection** tool and the **Range Selection** tool.

Object Selection

Selects audio parts.

Range Selection

Selects ranges.

Draw

Draws a volume curve.

Erase

Deletes audio parts.

Split

Splits audio parts.

Mute

Mutes audio parts.

Zoom

Zooms in. Hold **Alt/Opt**, and click to zoom out.

Comp

Assembles takes.

Scrub

Allows you to locate positions.

Play

Allows you to play back the clip from the position where you click until you release the mouse button.

Multiple Part Controls

Show Part Borders

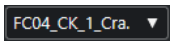
Shows/Hides part borders for the active audio part, within the left and right locators.

Part Editing Mode

Sets the editing mode for parts.

- **All Parts** allows you to edit all parts that are open in the **Editor** at the same time.
- **Active Part** restricts editing operations to the part that is selected in the **Activate Part for Editing** pop-up menu.
- **All Parts on Active Track** allows you to edit all parts on the active track.

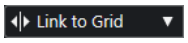
Activate Part for Editing



Lists all parts that were selected when you opened the editor and allows you to activate a part.

Nudge

Nudge Settings



Allow you to set up a snap grid for the nudge commands.

- By default, the snap grid for nudge operations is set to **Link to Grid**, and the step width corresponds to the snap grid.
- If you activate **Link to Primary Time Format**, the snap grid for nudge operations follows the primary time format, and you can set up the step width in the **Nudge Settings** pop-up menu.
- If you deactivate **Link to Grid** and **Link to Primary Time Format**, you can set up a snap grid that is fully independent for nudge operations. In this case, you can select a time format and a value from the **Nudge Settings** pop-up menu.

NOTE

To show the nudge buttons, click the points to the right of the **Nudge Settings**.

Nudge Start Left

Increases the length of the selected event by moving its start to the left.

Nudge 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.

Nudge End Left

Decreases the length of the selected event by moving its end to the left.

Nudge End Right

Increases the length of the selected event by moving its end to the right.

Snap

Snap to Zero Crossing

Restricts editing to zero crossings, that is, positions where the amplitude is zero.

Snap On/Off

Restricts horizontal movement and positioning to the specific positions.

Snap Type

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

Grid Type

Grid Type

Allows you to select a grid type. The options depend on the display format that is selected for the ruler. If you select **Seconds** as the ruler format, time-based grid options are available. If you select **Bars+Beats** as the ruler format, musical grid options are available.

Quantize

Apply Quantize

Applies the quantize settings.

Quantize Presets

Allows you to select a quantize preset.

Soft Quantize On/Off

Activates/Deactivates soft quantize.

AudioWarp Quantize On/Off

Activates/Deactivates **AudioWarp** quantize.

Open Quantize Panel

Opens the **Quantize Panel**.

Event Colors

Select Color for Selected Tracks or Events

Allows you to define audio part colors.

Independent Track Loop

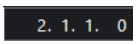
Independent Track Loop

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.

Loop Start Time



The independent track loop start time.

Loop End Time

The independent track loop end time.

Right Divider

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.

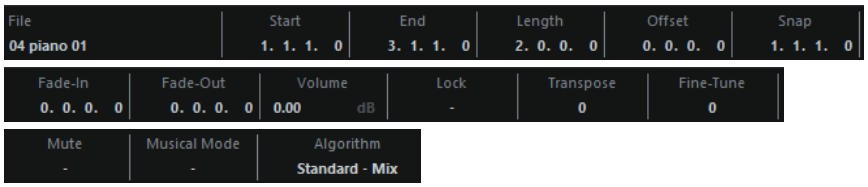
Show/Hide Info

Allows you to activate/deactivate the info line.

RELATED LINKS
Link Project and Lower Zone Editor Cursors on page 67
Auto-Scroll Settings Menu on page 245
Suspend Auto-Scroll When Editing on page 245

Info Line

The info line shows information about the audio part, such as the start, the end, the length, or the time stretch algorithm.



- 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.

RELATED LINKS
Audio Part Editor Toolbar on page 542

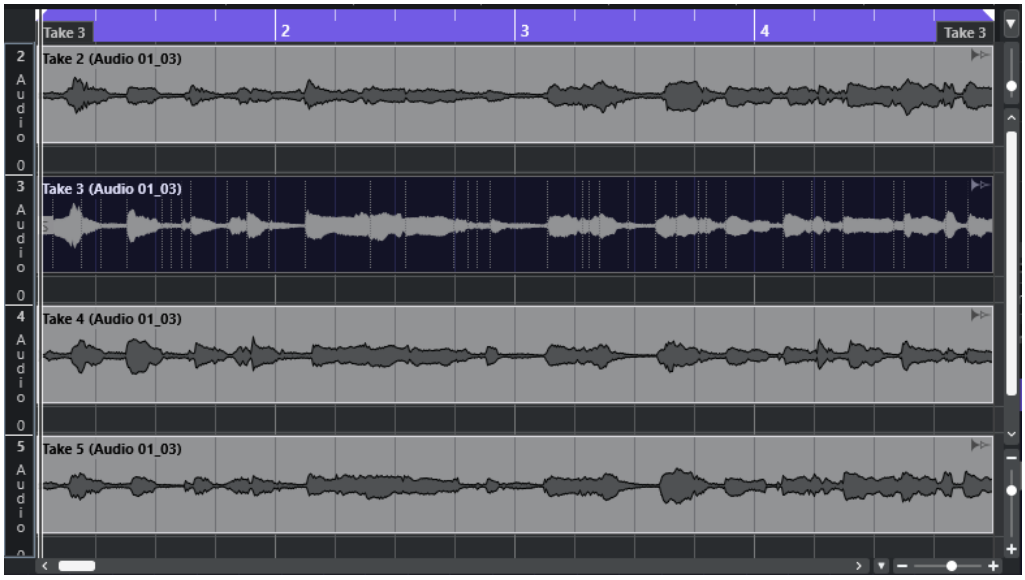
Ruler

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.

Lanes

Lanes can make it easier to work with several audio events in a part. Moving some of the events to another lane can facilitate selecting and editing.



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 156

Operations

You can perform all operations 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 affects all shared copies of this part.

RELATED LINKS
Project Window on page 35
Shared Copies on page 210

Audition

When auditioning with the **Speaker** tool or **Audition** icon, audio will be routed directly to the main mix (the default output bus).

Auditioning Using the Audition Tool

You can use the **Audition** tool to start a single audition of a selection or to loop an audition by using the **Audition Loop** function.

PROCEDURE

1. Do one of the following:
   - To play back the section between the first and last selected event, select the events with the **Object Selection** tool.
   - To play back a range, select a range with the **Range Selection** tool.
   - To start playback from the current cursor position, set the project cursor to that position.
2. On the toolbar, click **Audition**.

   NOTE

   If you activate **Audition Loop**, playback continues until you deactivate **Audition**.

RELATED LINKS
Audio Part Editor Toolbar on page 542

Auditioning Using the Play Tool

PROCEDURE

1. Select **Play** on the toolbar.
2. On an audio part, click and hold at the position from which you want to begin auditioning.

RESULT
You are auditioning the audio part. The audition stops at the end of the part you clicked on.

RELATED LINKS
Audio Part Editor Toolbar on page 542

Auditioning Using Regular Playback

PROCEDURE

1. Set the project cursor to the position where you want to start playback.
2. Optional: On the toolbar of the **Audio Part Editor**, activate **Solo Editor**.

   This way, only the events in the edited part are played back.
3. On the **Transport** panel, activate **Start**.

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 within the loop are 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, with every iteration of the cycle, the loop starts again as well.

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** section.

2. **Ctrl/Cmd**-click in the ruler to set the start of the loop. **Alt/Opt**-click to set the end of the loop.

   NOTE

   You can also edit the start and end positions of the loop numerically in the fields next to the **Loop** button.

RESULT

The loop is displayed 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

Audio Part Editor Toolbar on page 542

Scrub

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.

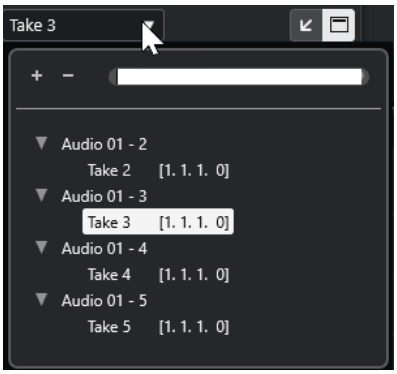
RELATED LINKS

Scrubbing on page 195

Handling Several Audio Parts

The **Multiple Part Controls** section in the **Audio Part Editor** toolbar features controls and tools for working with multiple parts.

- The **Activate Part for Editing** pop-up menu lists all parts that were selected when you opened the editor. The list is arranged in the same way as the track list, and the parts are listed under the name of their corresponding track. The parts are arranged by their position on the timeline. You can use the search field to search for part names.



To activate a part for editing, click its name in the list. As soon as you select a part, it is activated and centered in the display.

NOTE

You can also activate a part by clicking on it with the **Object Selection** tool.

- **Active Part** in the **Part Editing Mode** pane allows you restrict editing operations to the active part.

  If you select **Edit** > **Select** > **All** with this option activated, all events in the active part are selected, but no events in other parts.
- You can zoom in on an active part so that it is fully displayed in the window by selecting **Edit** > **Zoom** > **Zoom to Event**.
- Select **Show Part Borders** to see clearly defined borders for the active part.

  If this option is activated, all parts except the active one are grayed out, so that you can easily identify the borders. 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.
- To switch between parts, activate them via key commands. In the **Key Commands** dialog, there are two functions in the **Edit** category: **Activate Next Part** and **Activate Previous Part**. If you assign key commands to these, you can use them to cycle between parts.

RELATED LINKS
Key Commands on page 1094
Audio Part Editor Toolbar on page 542

Extensions in Cubase

Cubase supports extensions such as Audio Random Access (ARA). Extensions allow you to integrate compatible programs as plug-ins into your DAW.

To be able to use a program as a plug-in via an extension in Cubase, you must first install and register that program.

All extensions and plug-ins that are installed on your system are listed in the **System Component Information** window (**Extensions** page). Plug-ins that might cause stability problems or program crashes are deactivated. If you still want to use them, activate them manually in the **System Component Information** window.

In Cubase, extensions are integrated in the **Editor**.

RELATED LINKS
Activating Extensions for Audio Events on page 552
System Component Information Window on page 432
Editor on page 556

Activating Extensions for Audio Events

You can activate extensions, such as the ARA plug-ins Melodyne or SpectraLayers, for individual audio events.

PREREQUISITE

You have installed and registered the program that you want to use as an extension.

PROCEDURE

1. In the **Project** window, select the audio event that you want to edit.
2. Do one of the following:
   - Select **Audio** > **Extensions**, and select an option.
   - Right-click the audio event, select **Extensions**, and select an option.
   - Click the **Extension** field on the info line, and select an option.

     NOTE

     If the **Extension** field is not shown, right-click the info line and activate the **Extension** option.

RESULT

The extension is activated, and the interface is shown in the **Editor**. From here, you can edit the audio event.

In the **Project** window event display, the audio event shows a symbol in the upper right corner. This indicates that an extension is active.

For further information about the functions of a specific program that you use as an extension, refer to its documentation.

RELATED LINKS
Activating Extensions for More Audio Events on page 553
Activating Extensions for Audio Tracks on page 555
Removing Extensions from Audio Events on page 553

Activating Extensions for More Audio Events

You can activate extensions for more than one audio event via the **Editor**.

PREREQUISITE

- Your project contains at least two audio events, and you have activated the extension for one of them.
- The **Editor** is open in the lower zone of the **Project** window.

PROCEDURE

1. In the **Editor**, activate **Add Event**.
2. In the **Project** window, select the audio event for which you want to activate the extension.

   NOTE

   To activate the extension for several events, drag a selection rectangle to select events, and click one of them.
3. Deactivate **Add Event** to avoid accidentally activating the extension for audio events that you select in the **Project** window.

RESULT
The extension is activated for the audio event, and the audio event is shown in the **Editor**.

Removing Extensions from Audio Events

You can remove extensions and edits from audio events.

PREREQUISITE

- The **Editor** is open in the lower zone of the **Project** window.

PROCEDURE

1. In the **Project** window, select the audio event for which you want to remove the extension.

   NOTE

   To remove the extension for several events, drag a selection rectangle to select the events, and click one of them.
2. Do one of the following:
   - Right-click the audio event, and, from the context menu, select **Extensions** > **Remove Extension from Selected Events**.
   - On the **Project** window info line, click the **Extension** field, and select **No Extension**.

- In the **Editor**, activate **Remove Event**, and, in the **Project** window, select the audio event from which you want to remove the extension.

  NOTE

  Deactivate **Remove Event** to avoid accidentally removing the extension for audio events that you select in the **Project** window.

RESULT

The extension is removed for the audio events.

NOTE

If you activated an extension for the entire audio track, you can only remove it from a single audio event by dragging the event to an audio track for which the extension is not activated. When you are asked if you want to bounce the extension events, select **No**.

RELATED LINKS

Activating Extensions for Audio Events on page 552
Activating Extensions for Audio Tracks on page 555
Permanently Applying Extension Edits to Audio Tracks on page 556

Permanently Applying Extension Edits to Audio Events

You can permanently apply extension edits to audio events. Permanently applying extensions cannot be undone.

PREREQUISITE

You have activated an extension for an audio event and completed your editing.

NOTE

- All edits are applied to the audio clips, which means that you can resize the event, even if it has been trimmed before.
- Other audio events that refer to the same audio file are also affected.

PROCEDURE

- Do one of the following:
  - Select the audio event, and select **Audio** > **Extensions** > **Make Extension Permanent**.
  - Right-click the audio event, and select **Extensions** > **Make Extension Permanent**.

RESULT

All editing that you performed with the extension in the **Editor** is permanently applied to the audio event. The **Extension** field on the info line is set to **No Extension**.

Activating Extensions for Audio Tracks

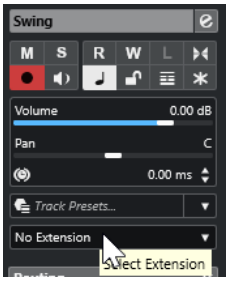
You can activate extensions, such as the ARA plug-ins Melodyne or SpectraLayers, for an audio track. All audio events on the audio track can be edited with that extension. Audio parts are ignored.

PREREQUISITE

You have installed and registered the program that you want to use as an extension.

PROCEDURE

1. In the **Project** window, select the audio track.
2. In the audio track **Inspector**, click **Select Extension**, and, from the pop-up menu, select an option.



RESULT

The extension is activated for all audio events on the audio track.

In the track list, the audio track shows a symbol next to the audio track symbol. This indicates that an extension is active for the track.

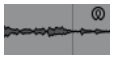
NOTE

- If you activated an extension for the audio track, you cannot remove it from single audio events on that track.
- Audio parts are ignored.

For any audio event that you add to that track at a later point in time, the extension is activated as well.

The interface of the selected extension is shown in the **Editor**. To open it and edit the audio events, select an audio event on the track.

In the **Project** window event display, the audio event shows a symbol in the upper right corner. This indicates that an extension is active.



For further information about the functions of a specific program that you use as an extension, refer to its documentation.

AFTER COMPLETING THIS TASK

To remove the extension, click **Extension** in the audio track **Inspector**, and, from the pop-up menu, select **No Extension**.

RELATED LINKS
Activating Extensions for Audio Events on page 552

Removing Extensions from Audio Tracks

You can remove extensions and edits from audio tracks.

PROCEDURE

- In the audio track **Inspector**, click **Select Extension**, and, from the pop-up menu, select **No Extension**.

RESULT

The extension is removed from the audio track and all of its events.

Permanently Applying Extension Edits to Audio Tracks

You can permanently apply extension edits to audio tracks. Permanently applying extensions cannot be undone.

PREREQUISITE

You have activated an extension for an audio event and completed your editing.

NOTE

- All edits are applied to the audio clips, which means that you can resize the event, even if it has been trimmed before.
- Other audio events that refer to the same audio file are also affected.

PROCEDURE

- Do one of the following:
  - Drag the audio event to an audio track for which the extension is not activated. When you are asked if you want to bounce the extension events, select **Yes**.
  - In the audio track **Inspector**, click **Select Extension**, and, from the pop-up menu, select **Make Extension Permanent**.

RESULT

The **Select Extension** field in the audio track **Inspector** is set to **No Extension**.

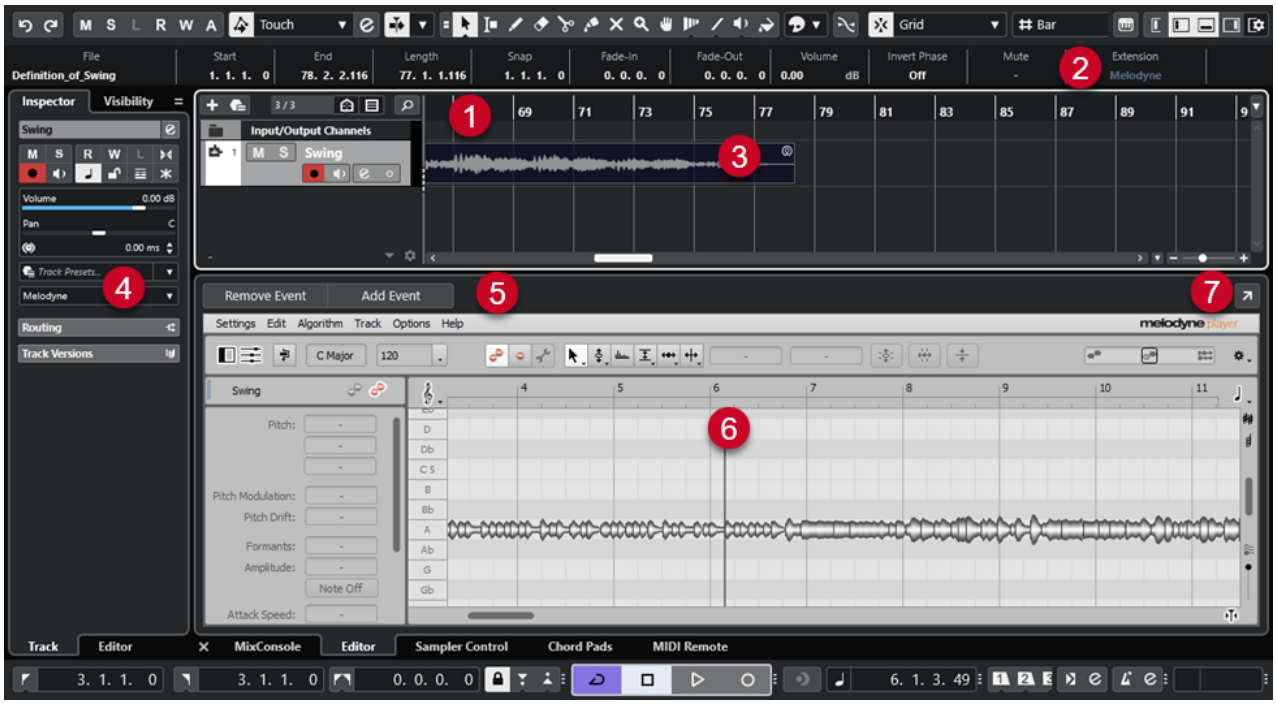
NOTE

For further information about the functions of a specific program that you use as an extension, refer to its documentation.

Editor

In Cubase, the user interface and the functions of a specific program that you activated as an extension are integrated in the **Editor** in the lower zone of the **Project** window.

- To open the **Editor** in the lower zone of the **Project** window, activate the extension, and, select the audio event or the audio track.



The **Editor** for Melodyne in the lower zone of the **Project** window

1 **Project window event display**

Shows the edited audio event in its musical context.

2 **Extension field**

Allows you to activate/remove an extension for the selected audio event.

3 **Audio event**

If an extension is activated for an audio event, the event in the **Project** window is shown with a symbol in the upper right corner.

4 **Select Extension pop-up menu**

Allows you to activate/remove an extension for the selected audio track.

5 **Add Event/Remove Event**

Automatically activates/removes the extension for all events that you select in the **Project** window.

6 **Editor**

Shows the user interface and the functions of a specific program that you activated as an extension. Cubase gives you an acoustic feedback of the changes during editing. All edits are saved with the project.

For further information about the functions of a specific program that you use as an extension, refer to its documentation.

7 **Open in Separate Window**

Opens the extension in a separate window. To show the extension in the **Editor** in the lower zone of the **Project** window again, click **Open in Lower Zone**.

NOTE

Extensions cannot be open in the **Editor** in the lower zone of the **Project** window and in a separate window at the same time.

RELATED LINKS
Activating Extensions for Audio Events on page 552
Activating Extensions for Audio Tracks on page 555

Audio Event Editing

You can edit audio events in the **Editor** in the lower zone of the **Project** window and in the **Project** window event display.

If you activate an extension for audio events or audio tracks, you can instantly edit the audio events in the **Editor** in the lower zone of the **Project** window. All editing that you perform is automatically rendered into the original file, and bouncing audio events to permanently apply the edits is not necessary. As a consequence, you can apply event fades and envelopes as well as warp edits on the edited events. In addition, the audio input for audio events remains in the buffer memory.

In the **Project** window event display, you can split, copy, paste, and resize audio events that you edited with the extension, and you can revert changes by using **Undo**.

Limitations

If the extension is activated, you can only edit with the tools available in the **Editor**. You cannot access any of the **Sample Editor** options. You cannot warp audio events, activate **Musical Mode**, perform **Hitpoint** editing, **AudioWarp Quantizing**, **Direct Offline Processing**, **Sizing Applies Time Stretch**, **Generate Harmony Voices**, or **Audio Alignment**.

You cannot transpose audio events using the info line, nor fine-tune them or invert their phase.

NOTE

All offline processes that you applied to audio events before activating the extension are preserved and become available again when you remove the extension.

NOTE

If you edit multiple selected events in the **Project** window event display, events for which you activated the extension are not affected by these functions.

RELATED LINKS
Event Resize Options on page 202
Splitting Events on page 206
Duplicating Events on page 209
Pasting Events on page 208
On Processing Shared Clips on page 1129
Specifying an Audio Pre-Record Time on page 274

Sampler Tracks

The sampler track feature allows 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 feature includes:

- The **Sampler Control** section in the lower zone of the **Project** window. Here, you can load and edit audio samples, choose from different playback modes, or transfer samples to Steinberg VST instruments.
- A sampler track in your project that allows you to control the playback of the sample that is loaded in **Sampler Control** via MIDI.

RELATED LINKS
Sampler Control on page 561
Sampler Tracks and Channels on page 113
Creating Sampler Tracks on page 560

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 or REX and REX2 audio files created by ReCycle from Propellerhead Software into **Sampler Control**.

- To load an audio sample, drag it from the **MediaBay**, the **Project** window event display, or the File Explorer/macOS Finder, and drop it in **Sampler Control**.

  IMPORTANT

  If **Sampler Control** already contains an audio sample, this sample and all of 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.
- Imported REX and REX2 files are converted to files in `.wav` format. These files are stored in a wav folder, created in addition to the original file.

  In **Sampler Control**, slicing is activated, and hitpoints are set according to the slice markers of the imported REX file.

RELATED LINKS
Self-Contained Projects on page 106
Pool on page 588
Playback Section on page 566

Loading MIDI Parts into Sampler Control

You can load MIDI parts from instrument tracks or MIDI tracks into **Sampler Control** by dragging.

NOTE

For this to work, the instrument track or the MIDI track must be routed to a VST instrument.

- To load a MIDI part, drag it from the **MediaBay**, the **Project** window event display, or the File Explorer/macOS Finder, and drop it in **Sampler Control**.

  IMPORTANT

  If **Sampler Control** already contains MIDI, it is overwritten.

Cubase creates an audio file from the MIDI part. This includes the instrument sound and the channel settings from the VST instrument or the return channel. The audio file is copied to the project audio folder.

RELATED LINKS
VST Instruments on page 664
Basics Section for Instrument Tracks on page 135
Basics Section for MIDI Tracks on page 137

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 **Sample Editor Inspector**, 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.
- From 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.

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, including its settings, to an instrument.

2 **Waveform display/Envelope editor**

Shows the waveform image of the sample. Allows you to define the playback range for the sample and to set a loop.

If the envelope editors for the pitch, the filter, or the amp section are shown, you can adjust their envelope curve settings here.

3 **Playback and Sound Parameter section**

Allows you to make settings for playback, warping, and slicing (**Playback** section), tuning and pitch modulation (**Pitch** section), filtering (**Filter** section), and 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 560
Waveform Display on page 565
Envelope Editors on page 571
Playback and Sound Parameters on page 566
Keyboard Section on page 579

Sampler Control Toolbar

The **Sampler Control** toolbar contains various settings and functions.

Undo/Redo

These buttons allow you to undo/redo **Sampler Control** parameter changes.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

Switch between A/B Settings

Allows you to switch between different parameter settings.

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 loop, as read from the sample file or calculated from the sample length. In **Slice** playback mode, you can manually adjust this value.

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.

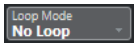
Fixed Pitch

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.

NOTE

This setting is only available in **Normal** and **AudioWarp** playback mode.

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 between forward and backward playback.
- 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 between forward and backward playback for as long as you hold the key.

NOTE

This setting is only available in **Normal** and **AudioWarp** playback mode.

Signature

Shows the detected time signature of the sample. You can manually adjust this value.

NOTE

This setting is only available in **Slice** playback mode.

Bars/Beats

These value fields show the detected length of the sample in bars and beats. You can manually adjust these values, which affects the grid and the tempo.

NOTE

This setting is only available in **Slice** playback mode.

Grid

Sets the grid.

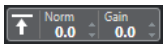
NOTE

This setting is only available in **Slice** playback mode.

One Shot

The sample is played back once from beginning to end, regardless of any loop settings.

Normalize Sample



Normalizes the sample by detecting the highest peak level in the sample and adjusting the gain so that it reaches the set **Normalization Level** value. **Sample Gain** allows you to manually modify the gain value afterwards.

Trim Sample

Trims the sample to a selected range. If no range is selected, the sample is trimmed to the range that is set with the sample start/end markers. **Revert to Full Sample** resets the sample to its original range.

NOTE

This setting is only available in **Normal** and **AudioWarp** playback mode.

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. With monophonic playback activated, a note that was stolen by another note is retriggered if you still hold the stolen note when you release the new one. You can play trills by holding one note and quickly and repeatedly pressing and releasing another note, for example.

NOTE

If **Monophonic Mode** is deactivated, you can play up to 128 notes simultaneously.

If **Legato Mode** is activated as well and you play legato notes, only the pitch of the sample is set to the new note. The sample is not retriggered, and the envelopes keep running.

Lock Parameter Settings

With this option is activated, the current **Sampler Control** parameter settings are kept if you load another sample into **Sampler Control**.

NOTE

Parameters that are directly related to the sample, for example, sample start/end, loop start/end, root key, or tempo are not kept, but taken from the new sample instead.

MIDI Reset

Stops playback and resets all MIDI controllers to their default values.

This is useful, for example, if you want to stop the playback of a long audio sample in **One Shot** mode.

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.

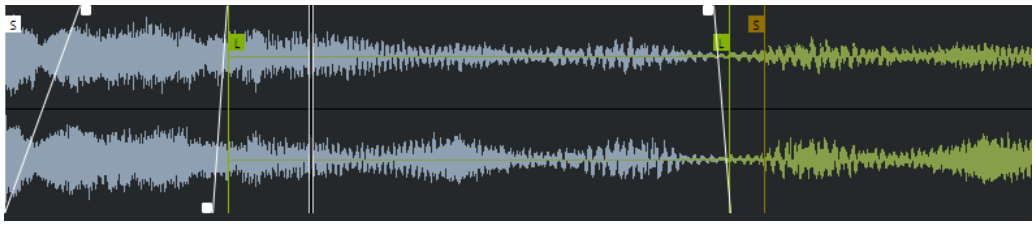
Open in Lower Zone

Opens **Sampler Control** in the lower zone.

RELATED LINKS
Setting the Root Key Manually on page 582
Setting up Loops for Audio Samples on page 582
Normalizing Samples on page 584
Transferring Samples from Sampler Control to VST Instruments on page 580

Waveform Display

The waveform display shows the waveform of your audio sample. It allows you to define the start and the end of the audio sample, of the loop, and of the fade-in/-out.



Set Sample Start

Defines the sample start. On playback, all audio before the sample start is ignored.

Set Sample End

Defines the sample stop. On playback, all audio after the sample end is ignored.

Set Sample Start and End Markers Simultaneously

When you move the mouse cursor between the sample start and the end marker, a connecting bar appears at the height of the marker flags. Dragging this bar moves both markers simultaneously whilst keeping their relative distance to each other.

Set Sustain Loop Start

Defines where the sustain loop starts.

Set Sustain Loop End

Defines where the sustain loop ends. When this marker is reached, playback jumps back to start of the sustain loop.

Set Sustain Loop Start and End Markers Simultaneously

When you move the mouse cursor between the sustain loop start and end marker, a connecting bar appears at the height of the marker flags. Dragging this bar moves both markers simultaneously whilst keeping their relative distance to each other.

Set Fade In Length

Defines the fade-in length.

Set Fade Out Length

Defines the fade-out length.

Set 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 1094

Playback and Sound Parameters

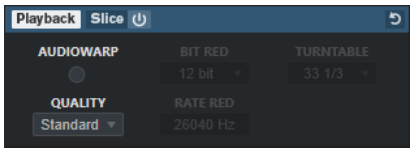
In the sections below the waveform display, you can edit the settings for playback, warping, and slicing (**Playback** section), tuning and pitch modulation (**Pitch** section), filtering (**Filter** section), and level and panorama (**Amp** section).

RELATED LINKS
Playback Section on page 566
Pitch Section on page 569
Filter Section on page 570
Amp Section on page 571

Playback Section

In the playback section, you can choose from different playback options.

Playback Tab



Quality

Sets the quality for sample playback. When samples are played back with a pitch other than their original one, you can choose from different algorithms for transposing them in real time.

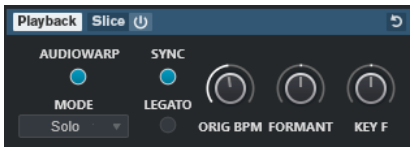
- **Standard**, **High**, **Best**, and **Extreme** provide different algorithms for transposing samples in real time. The higher the quality setting, the better the suppression of artifacts, particularly with higher frequencies. Better quality settings, however, also lead to a higher processor load. For samples with little high-frequency content, we recommend to use **Standard** quality.
- **Vintage** allows for a deliberate reduction of the playback quality by lowering the bit rate and the sample rate to emulate the artifacts of early samplers. **Turntable** emulates a memory-optimized sampling workflow of the past, where turntables were sampled at a higher speed to record short samples, and then tuned down again to correct for the change in pitch. A value of **45** rpm leads to typical vintage artifacts. A value of **78** rpm allows you to increase the effect even further.

NOTE

This option is only available if **AudioWarp** is deactivated.

AudioWarp

Activates/Deactivates AudioWarp for sample playback. AudioWarp allows you to apply time stretching and formant shifting to your samples. You can choose from different warp and sync modes.



If **AudioWarp** is activated, the following options are available in the **Playback** section:

Mode

Sets the AudioWarp mode.

- **Music** mode offers parameters for time stretching.

  This mode is suitable for complex material, such as 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.

- **Solo** mode offers parameters for time stretching and formant shifting.

  This mode is suitable for loops and samples of solo instruments or vocals.

- **Spectral** mode offers parameters for time stretching and formant shifting.

  This mode uses a spectral resynthesis algorithm. It is suitable for all types of audio, such as loops and samples of solo instruments or vocals. It allows for extreme stretching factors down to 0%. This allows you, for example, to play back the static spectrum that is present at the sample start position.

- **Spectral HD** mode offers parameters for time stretching and formant shifting.

  This mode works in the same way as **Spectral** mode, but uses a higher internal frequency resolution, which often works better with audio that contains very low frequencies or audio with a high frequency density.

- **Spectral Vocal** mode offers parameters for time stretching and formant shifting.

  This mode works in the same way as **Spectral** mode, but is optimized for vocals.

Sync

You can set the playback speed of the sample manually or sync it to the project tempo.

- If **Sync** is deactivated, **Speed** allows you to set the playback speed of the sample manually, in percent.

  NOTE

  If you set the AudioWarp mode to **Music**, the minimum playback speed adjustment is 12.5%. Values below this limit have no effect.

- If **Sync** is activated, **ORIG BPM** allows you to enter the original tempo of the sample in beats per minute. The playback speed of the sample is adjusted to match the tempo of Cubase.

  NOTE

  If you set the AudioWarp mode to **Music**, the lower limit of the playback speed adjustment is 12.5%. Values below this limit have no effect.

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 of the following notes start from the current playback position, for as long as the first note is held.

Formant

Allows you to adjust formant shifting. This is especially useful for samples of human voices or acoustic instruments. **Key F** determines how much the formants follow the pitch. Use positive values to minimize the Mickey Mouse effect when pitch-shifting a sample.

The formant parameters are not available in AudioWarp mode **Music**.

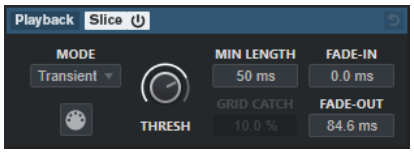
Slice Tab

You can create slices of a sample. These are automatically mapped to the keyboard, so that each slice can be played back individually. During that process, a MIDI phrase that corresponds to the sliced sample is created. If you drag this MIDI phrase to the **Project** window and drop it on the sampler track, a MIDI part is created. Use this part to play back the slices in their original order, or to rearrange the events in the MIDI part in order to change their playback order.

Enabling **Slice Playback** automatically slices the sample. You can choose from different slice detection modes or combine them. You can manually adjust the position of the slice markers by dragging, and you can **Alt**-click to add or remove slices.

NOTE

Slice playback uses the settings for **Quality** and **AudioWarp** on the **Playback** tab.



Slice Playback On/Off

Activates/Deactivates slice playback.

Mode

Sets the slice detection mode.

- **Transient** mode allows you to specify the **Threshold** that determines the minimum peak level that a transient needs to become a hitpoint.
- **Grid** mode sets the hitpoints according to the **Grid Resolution** on the **Sampler Control** toolbar.
- **Transient + Grid** mode combines the conditions of both **Transient** and **Grid** mode.
- **Manual** mode allows you to add and to remove slices manually by **Alt**-clicking in the waveform. In this mode, no automatic hitpoint detection is performed.

Threshold

Determines the minimum level that a hitpoint needs to be detected as the start of a new slice.

Min Length

Sets the minimum length of a slice.

Grid Catch

In **Transient + Grid** slice detection mode, this parameter specifies how close to the grid a hitpoint must be.

Fade-In

Sets the fade-in time for all slices of the loop.

Fade-Out

Sets the fade-out time for all slices of the loop.

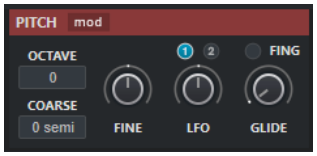
Drag MIDI Phrase to Project

Click this button, and drag it to the event display to create a MIDI part that corresponds to the sample in your project.

RELATED LINKS
Slicing Samples on page 585

Pitch Section

In the **Pitch** section, you can adjust the tuning and the pitch of your audio sample. The pitch envelope allows you to modulate the pitch over time.



Show/Hide Pitch Modulators

Shows/Hides the pitch envelope and the LFO editor in the waveform window.

Octave

Sets the pitch of the sample in octave steps.

Coarse

Sets the pitch of the sample in semitone steps.

Fine

Fine-tunes the pitch of the sample in cents (hundredths of a semitone).

LFO

Allows you to select the LFO and to set the LFO modulation depth.

Glide

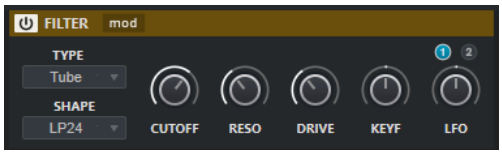
Specifies the time that is needed to bend the pitch of the sample from one note to the following note. If you move this control all the way to the left, **Glide** is deactivated.

If **Fingered** is activated, the pitch only glides between notes that are played legato.

RELATED LINKS
Envelope Editors on page 571

Filter Section

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.



Filter On/Off

Activates/Deactivates the filtering effect.

Show/Hide Filter Modulators

Shows/Hides the filter envelope and the LFO editor in the waveform window.

Type

Sets the filter type.

Shape

Sets the filter shape.

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.

Cutoff Key Follow

Sets the cutoff modulation via the note number. Increase this parameter to raise the cutoff with higher notes. At 100%, the cutoff frequency follows the played pitch exactly.

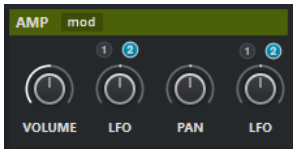
LFO

Allows you to select the LFO and to set the LFO modulation depth.

RELATED LINKS
Envelope Editors on page 571

Amp Section

In the **Amp** section, you can set the volume and the pan of the sample. The amplifier envelope allows you to shape the volume over time.



Show/Hide Amp Modulators

Shows/Hides the amp envelope and the LFO editor in the waveform window.

Volume

Sets the level of the sample.

Volume LFO

Allows you to select the volume LFO and to set the volume LFO modulation depth.

Pan

Sets the position of the sample in the stereo panorama.

Pan LFO

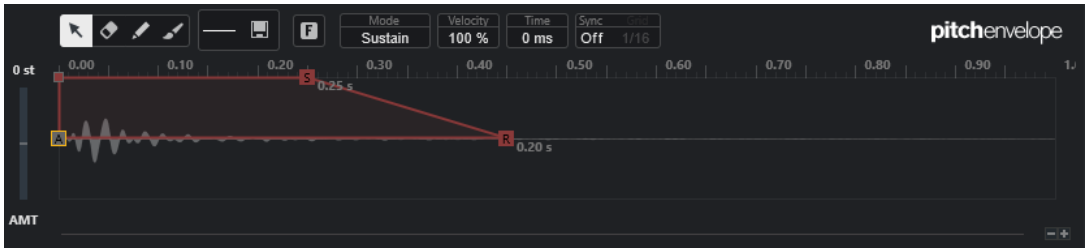
Allows you to select the pan LFO and to set the pan LFO modulation depth.

RELATED LINKS
Envelope Editors on page 571

Envelope Editors

You can adjust the **Pitch**, **Filter**, and **Amp** envelope curves. Each of these envelopes can contain up to 512 nodes.

- Click **Show/Hide Pitch Modulators**, **Show/Hide Filter Modulators**, or **Show/Hide Amp Modulators** in the section header to show/hide the corresponding envelope editor and the LFO section.



Pitch Envelope

Filter Envelope

Amp Envelope

Edit

Allows you to edit single or multiple nodes.

Erase

Allows you to delete envelope nodes.

Draw

Allows you to insert a predefined envelope shape.

You can enter shapes by clicking or by clicking and dragging.

- Click once on the envelope display to insert the selected shape with its predefined length.

  If **Sync Envelope** is activated, the shape is inserted at the nearest grid position. If you repeatedly click at the same position, the shape is inserted multiple times.
- Click and drag to insert the shape in the covered drag area. If **Sync Envelope** is activated, the start and the end nodes of the shape snap to the grid, and all nodes in between are scaled relative to the overall length of the shape.

  After the shape is inserted, all nodes remain selected. This allows you to switch back to the **Edit** tool for further editing of the shape.

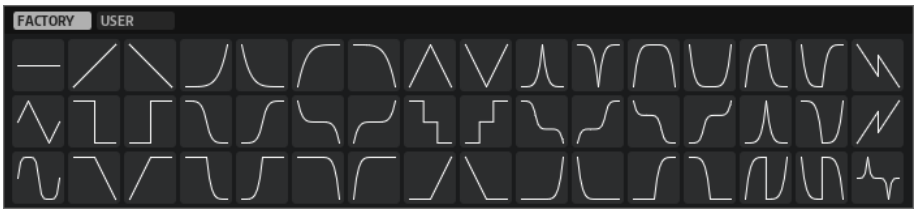
With **Fixed Mode** activated, the inserted nodes replace all nodes that cover the current time range. With **Fixed Mode** deactivated, all consecutive nodes are moved to the right.

Paint

Allows you to paint in a predefined envelope shape. The shape is inserted with its predefined length.

Select Shape

Allows you to select the shape that is used when entering nodes with the **Draw** or the **Paint** tool. A shape consists of multiple nodes making up a progression that can be used when creating your envelopes. The predefined factory shapes are available via the **Factory** tab. You can also create your own shapes and add them to the **User** tab. Up to 48 shapes are available per tab.



Save Shape

Allows you to save the current envelope shape as a user shape. You can add up to 48 user shapes.

Fixed Mode

- With **Fixed Mode** activated, only the selected nodes are moved when you move a node on the time axis.
- With **Fixed Mode** deactivated, all subsequent nodes are moved as well when you move a node.

Mode

Determines how the corresponding 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.
- Select **Shaper** to use the envelope as a modulator that allows you to create freely programmable cyclic modulations. To ensure a seamless cycle, the start and end node levels are linked.
  - The **Pitch** and **Filter** envelopes continue to be played in a loop after releasing notes, which makes it possible to use the modulation in the **Release** phase of a note.
  - The **Amp** envelope immediately stops playing when notes are released.

    NOTE

    The end node of the **Amp** envelope does not need to have a level of zero. However, when switching from **Shaper** mode to another mode, the end node level is set back to zero.

Velocity

Determines how the velocity affects the level of the corresponding envelope.

The level of the envelope depends on the velocity setting and on how hard you hit a key. The higher the values and the harder you hit a key, the more the level of the envelope increases.

Time

Sets the time value for the selected node.

Sync Envelope

Activates/Deactivates tempo sync for the corresponding envelope. **Grid** sets the base note value for tempo-syncing the envelope.

Shaper Sync Mode

Sets the tempo sync mode for the corresponding envelope if **Shaper** mode is selected.

- With **Tempo + Retrig** selected, the entire length of the envelope is scaled with the project tempo and can be retriggered, depending on the selected **Retrigger Mode**.
- With **Tempo + Beat** selected, the entire length of the envelope is scaled with the project tempo. The envelope restarts with the transport and lines up to temporal positions in the project. In this mode, the **Retrigger Mode** is not available.
- NOTE

  This parameter is only available with **Sync Envelope** activated.

Shaper Retrigger Mode

Determines whether the envelope is restarted when a note is triggered. The envelope restarts either immediately (**Tempo + Retrig**) or lines up with the project position (**Tempo + Beat**).

- With **Off** selected, the envelope is not retriggered and runs freely.
- With **First Note** selected, the envelope restarts when a note is triggered and no other notes are held.
- With **Each Note** selected, the envelope restarts each time that a note is triggered.

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 **Pitch** and **Filter**.

Envelope display

Shows the pitch, filter, or amp 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.

The upper part of the context menu of the envelope display allows you to edit the nodes of the envelope curve:

- **Copy** copies the selected nodes to the clipboard.
- **Paste** pastes nodes from the clipboard to the cursor position.
- **Replace** replaces the selected nodes with the nodes from the clipboard.
- **Duplicate** duplicates the selected nodes.

- **Invert Levels** flips the nodes horizontally around the center of the selection.
- **Reverse Times** flips the **Time** values of the nodes around the horizontal center of the selection.
- **Set Sustain Node** makes the selected node the sustain node.

The lower part of the context menu allows you to assign automation or quick controls to the attack, decay, sustain, and release segments of the envelope:

- **Env Attack** allows you to scale the first envelope segment. The control range is from 0 (1/30,000) to 1 (30,000). This means that you can stretch/extend an attack time of 1 ms to a length of 30 s, and you can shorten/reduce an attack time of 30 s to a length of 1 ms, for example.
- **Env Decay** allows you to scale all segments after the first node, up to the sustain node. The control range is from 0 (1/100) to 1 (100). This means that a decay time of 5 seconds can be reduced to 50 ms and extended to 500 s, for example.
- **Env Sustain** allows you to scale the sustain level. The range starts at 0 and ends at the sustain level set for the envelope.
- **Env Release** allows you to scale all segments after the sustain node. The control range is from 0 (1/100) to 1 (100).

RELATED LINKS
Selecting Nodes on page 575
Node Editing on page 575
Zoom Functions in the Envelope Editors on page 577
Synchronizing Envelopes to the Project Tempo on page 584

Selecting Nodes

You can select single nodes or multiple nodes. Selected nodes are edited together.

CHOICES

- To select a node, click on it in the graphical editor.
  The focused node is indicated by a frame. The value fields above the graphical envelope editor display the parameters of the focused node.
- To add a node to a selection, **Shift**-click the node. Selected nodes are edited together.
- To select multiple nodes, draw a rectangle around them with the mouse.
- To select all envelope nodes, press **Ctrl/Cmd**-**A**.
- If the graphical envelope editor has the focus, you can select the next or the previous node with the **Left Arrow** and **Right Arrow** keys.
- If multiple nodes are selected and the **Edit** tool is active, a selection rectangle is shown, allowing for further editing functions.

RELATED LINKS
Keyboard Focus in the Project Window on page 75

Node Editing

You can edit single nodes or multiple selected nodes.

- To add a node, double-click on the envelope curve.
- You can also add nodes by copying and pasting selected nodes.

When you press **Ctrl/Cmd**, the insert position is indicated by a line. With **Sync Envelope** activated, this insert line is aligned with the note value grid.

NOTE

An envelope can consist of up to 512 nodes. If more nodes are copied to the clipboard than can be pasted into the envelope, a warning indicator lights up.

- To delete a node, double-click it, or click it with the **Erase** tool.

  NOTE

  - You cannot remove the attack (**A**), the sustain (**S**), or the release node (**R**).
  - All nodes added after the sustain node affect the release phase of the envelope.

- To delete several nodes, select them, and press **Delete** or **Backspace**. Alternatively, drag a selection rectangle around them with the **Erase** tool.

  With **Fixed Mode** activated, the positions of the remaining nodes are not modified. The **Time** value of the node to the right of the deleted selection is automatically adjusted.

  With **Fixed Mode** deactivated, the remaining nodes are moved to the left to fill the gap.

- To change the curvature between two nodes, drag the curve segment up or down, or enter a new value in the **Curve** field.

  Positive values change the curvature towards logarithmic, and negative values towards exponential behavior.

  To reset a curve to linear, **Ctrl/Cmd**-click it.

- To move a node, drag it sideways, or enter a new value in the **Time** field.

  For a higher resolution, hold **Shift** while moving the nodes.

  To limit the movement to the time axis, that is, to change only the horizontal position of a node, hold **Ctrl/Cmd** while dragging.

- To change the level of a node, drag it up or down, or enter a new value in the **Level** field.

  For a higher resolution, hold **Shift** while moving the nodes.

  To limit the movement to the level axis, that is, to change only the vertical position of a node, hold **Alt/Opt** while dragging.

Replacing Node Selections

You can replace a selection of nodes with nodes copied to the clipboard or with one of the predefined shapes on the shape selector.

- To replace multiple nodes with a predefined curve, select the nodes, and select the curve from the shape selector.

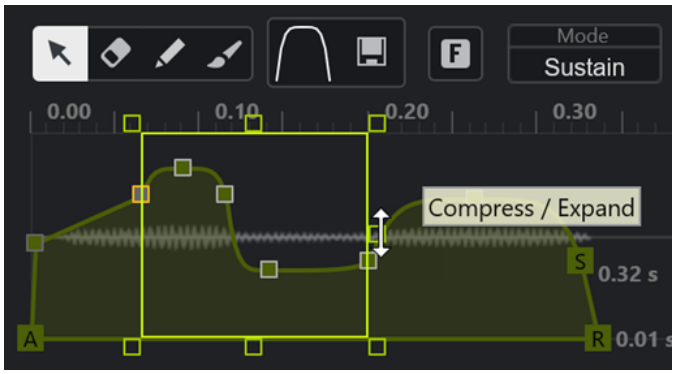
  The shape is stretched/compressed to replace the exact time range of the selection.

- To replace multiple nodes with a selection of nodes from the clipboard, select the nodes that you want to replace, open the context menu, and select **Replace**.

  The copied nodes are stretched/compressed to replace the exact time range of the selection.

Multi Selection Editing with the Edit Tool

With multiple envelope nodes selected and with the **Edit** tool active, a selection rectangle is shown in the envelope display. It has six handles that allow you to modify the selected nodes.



- To compress the node levels, drag the right middle handle down.
- To expand the node levels, drag the right middle handle up.
- To tilt the left part of the node selection upwards or downwards, drag the upper left handle.

  To use a shelving curve instead of a linear curve, press **Ctrl/Cmd**.
- To tilt the right part of the node selection upwards or downwards, drag the upper right handle.

  To use a shelving curve instead of a linear curve, press **Ctrl/Cmd**.
- To scale the node levels, drag the upper middle handle.

  To offset all nodes, press **Shift**. To use a bell curve instead of a linear curve, press **Ctrl/Cmd**.
- To scale the overall time of the selected nodes relative to the start node, drag the lower right handle.
- To scale the overall time of the selected nodes relative to the start node, drag the lower left handle.
- To move the time position of all selected nodes, drag the lower middle handle to the left or right.

  To move the nodes in smaller steps, press **Shift**.
- To compress or expand the overall time of the selected nodes relative to the selection center, press **Ctrl/Cmd**, and drag the lower middle handle.
- To change the level and position of all selected nodes, drag one of the nodes.

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/Opt**, and click and drag the mouse over the region.

RELATED LINKS
Key Commands on page 1094

LFO Editor

Sampler Control provides two monophonic LFOs. These LFOs are only calculated once and feed all voices at the same time.

LFO

Allows you to select LFO 1 or 2 for editing.

Sync

Defines how the speed of the corresponding LFO is set.

- **Off** allows you to set the LFO speed in Hz.
- **Tempo + Retrig** allows you to set the LFO speed in note values. The resulting rate depends on the tempo of your project.
- **Tempo + Beat** allows you to set the LFO speed in note values. The resulting rate depends on the tempo of your project. Additionally, the current start phase is calculated based on the current position.

Retrigger

Defines whether the LFO is restarted with the specified start phase when a new note is triggered. This parameter is available for the sync modes **Off** and **Tempo + Retrig**.

- If **Off** is selected, the LFO is not restarted.
- **First Note** restarts the LFO when a note is triggered and no other note is held.
- **Each Note** restarts the LFO every time that a note is triggered.

MW

Allows you to scale the output level of the LFO via the modulation wheel of your keyboard. This allows you, for example, to control the vibrato of the sound with the modulation wheel.

Waveform

Sets the waveform for the selected LFO. You can adjust the selected waveform using the **Shape** control to the right.

- **Sine** produces smooth modulation, suitable for vibrato or tremolo. **Shape** adds additional harmonics to the waveform.
- **Triangle** is similar to **Sine**. **Shape** continuously changes the triangle waveform to a trapezoid.
- **Saw** produces a ramp cycle. **Shape** continuously changes the waveform from ramp down to triangle to ramp up.
- **Pulse** produces stepped modulation, where the modulation switches abruptly between two values. **Shape** continuously changes the ratio between the high and the low state of the waveform. If **Shape** is set to 50%, an even square wave is produced.
- **Ramp** is similar to the **Saw** waveform. **Shape** increasingly adds silence before the sawtooth ramp up begins.

- **Log** produces a logarithmic modulation. **Shape** continuously changes the logarithmic curvature from negative to positive.
- **S & H 1** produces randomly stepped modulation, where each step is different. When fully turned right, **Shape** puts ramps between the steps and changes the sample and hold signal into a smooth random signal.
- **S & H 2** is similar to **S & H 1**. The steps alternate between random high and low values. When fully turned right, **Shape** puts ramps between the steps and changes the sample and hold signal into a smooth random signal.

Freq

Controls the frequency of the modulation, that is, the speed of the LFO.

If **Sync** is activated for the corresponding LFO, the speed is specified in fractions of beats. If **Sync** is deactivated, you can set the frequency in Hz.

Phase

Sets the initial phase of the waveform when the LFO is retriggered. If **RND** is activated, each note starts with a randomized start phase.

Keyboard Section

In the keyboard section of **Sampler Control**, you can set the root key and the key range of the sample as well as 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 24 semitones.

Key range handles

Determine the key range of the sample.

NOTE

The set key range is used in **Normal** and **AudioWarp** mode.

Root key handle

Determines the root key of the sample.

RELATED LINKS

Setting the Root Key Manually on page 582
Setting the Key Range on page 583

Sampler Control History

Sampler Control offers its own edit history that allows you to undo/redo your most recent edits.

You can undo/redo up to 20 parameter changes or edit steps in **Sampler Control** by clicking **Undo** or **Redo** on the **Sampler Control** toolbar. This can be particularly useful, when editing complex envelopes, for example, where a single action with the **Paint** tool can significantly alter the existing envelope.

NOTE

Edits in **Sampler Control** are not available via the **Edit History** dialog.

RELATED LINKS
Sample Editing and Playback Functions on page 581
Sampler Control Toolbar on page 561
Edit History Dialog on page 85

Transferring Samples from Sampler Control to VST Instruments

You can transfer audio samples to specific Steinberg VST instruments with any settings that you have made in **Sampler Control**.

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 of 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
- Padshop
- Backbone

Transferring a Sample

PREREQUISITE

You have installed Groove Agent, Groove Agent SE, HALion, Padshop, or Backbone. 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 its settings are loaded in the selected VST instrument.

NOTE

If a parameter is not available for the VST instrument that you have chosen as the destination, it is either not transferred or it is adapted to a similar parameter in the VST instrument. The following applies:

- Groove Agent/Groove Agent SE: LFO and filter settings are not used.
- Padshop: Sample trimming is not used. A transfer in **AudioWarp** playback mode sets the grain settings to a **Number** of 2 grains and the **Speed** value accordingly. A transfer in **Slice** playback mode uses the selected slice only.
- Backbone: Sample trimming is not used. A transfer in **AudioWarp** playback mode activates **Resynth** mode and sets the **Speed** value accordingly. A transfer in **Slice** playback mode uses the selected slice only.

RELATED LINKS
Transferring a Sample on page 580

Sample Editing and Playback Functions

Sampler Control allows you to tailor the loaded sample to your needs and to specify the way it is played back.

All sample editing in **Sampler Control** is non-destructive, and its edit history allows you to undo/redo your most recent edits and parameter changes.

RELATED LINKS
Sampler Control History on page 580

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.

PREREQUISITE

You have loaded a sample into **Sampler Control**.

PROCEDURE

1. In the waveform display, 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.

RESULT

When you trigger the sample, only the defined range between start and end handle is played back.

AFTER COMPLETING THIS TASK

- You can move both sample start and end markers simultaneously whilst keeping their relative distance to each other by moving the mouse cursor between the two markers and dragging the connecting bar.

NOTE

This only works if no loop mode is selected.

- You can trim the sample length to the defined playback range by clicking **Trim Sample** in the **Sampler Control** toolbar.

RELATED LINKS
Waveform Display on page 565
Sampler Control Toolbar on page 561

Setting up Loops for Audio Samples

You can set up a loop that is played back when the sample is triggered.

PREREQUISITE

You have loaded a sample into **Sampler Control**.

PROCEDURE

1. On the toolbar, click **Loop Mode**, and select a loop mode from the pop-up menu.

   The **Set Sustain Loop Start** and **Set Sustain Loop End** handles and the green loop range overlay are shown.
2. Drag the **Set Sustain Loop Start** and **Set Sustain Loop 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.

RESULT

When you trigger the sample in a loop mode, the defined loop range is used.

AFTER COMPLETING THIS TASK

- You can move both start and end markers simultaneously by dragging the area between the loop markers.

RELATED LINKS
Setting Sample Start and End on page 581

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. In **Slice** mode, lowering the root key allows you to increase the number of slices that can be mapped to your keyboard.

NOTE

If you load a sample that does not contain any root key information, the root key is automatically set to C3.

PROCEDURE

- 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 via your computer keyboard, your mouse wheel, or your MIDI keyboard.

RELATED LINKS
Keyboard Section on page 579
Setting the Key Range on page 583
Slicing Samples on page 585

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.

PREREQUISITE

You have loaded a sample into **Sampler Control**.

PROCEDURE

- In the keyboard section, adjust the key range by dragging the range handles above the keyboard display.

RESULT

Only keys within the determined key range play a sound when triggered.

RELATED LINKS
Keyboard Section on page 579

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 **On-Screen 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 **On-Screen 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

Monitoring via Cubase on page 268
On-Screen Keyboard on page 261
Sampler Control Toolbar on page 561
MIDI Events on page 192
Basic Recording Methods on page 263

Synchronizing Envelopes to the Project Tempo

You can synchronize the **Pitch Envelope**, the **Filter Envelope**, and the **Amp Envelope** to the tempo of your project. This allows you to set envelope times that relate to musical time intervals, regardless of tempo changes.

PREREQUISITE

You have loaded a sample into **Sampler Control**.

PROCEDURE

1. In the corresponding envelope section, set **Sync** to **On**.
2. Use **Grid** to set a note value. This sets the note resolution to which envelope nodes snap when coming close enough.

   NOTE

   - The **Time** field of an envelope node displays times in fractions of a whole note. The fraction is always reduced to the smallest possible value, for example, 2/16 is displayed as 1/8.
   - You can also enter note values manually in the **Time** field. Envelope nodes that do not exactly match a note value display the closest note value.

Normalizing Samples

You can normalize samples to a target value. An additional gain control allows you to fine-tune the gain value afterwards.

PREREQUISITE

You have loaded a sample into **Sampler Control**.

PROCEDURE

1. On the **Sampler Control** toolbar, set a **Normalization Level** as the target value.
2. Click **Normalize Sample**.

   The sample is normalized to the target value.
3. Use **Sample Gain** to fine-tune the normalization result.

RELATED LINKS
Sampler Control Toolbar on page 561

Slicing Samples

You can slice samples into several pieces that are mapped to the keyboard, so that you can play every slice individually.

PREREQUISITE

You have loaded a sample into **Sampler Control**.

PROCEDURE

1. In the playback section, select the **Slice** tab, and activate slicing.
2. Optional: Change the **Slice Mode**, adjust the slicing parameters, and add or delete slicing markers.
3. Optional: If you want to increase the number of slices that can be mapped to your keyboard, lower the root key in the keyboard section.

RESULT

The slices are automatically mapped to the keyboard, starting on the set root key. You can play a slice by pressing the corresponding key on your MIDI keyboard.

AFTER COMPLETING THIS TASK

You can create a corresponding MIDI phrase in your project by dragging the **Drag MIDI Phrase to Project** button to the event display. This allows you to rearrange the order of the slices.

RELATED LINKS
Playback Section on page 566
Setting the Root Key Manually on page 582
Setting the Key Range on page 583

Freezing Sampler Tracks

You can freeze sampler tracks to reduce the real-time processing load.

PROCEDURE

1. Select the sampler track, and open the top **Inspector** section.
2. Click **Freeze Channel**.
3. In the **Freeze Channel Options** dialog, make your changes.
4. Click **OK**.

RESULT

- The output of the sampler track is rendered to an audio file, and on playback you hear the same sound as before freezing.
- Less CPU load is used.
- The **Freeze Channel** button lights up.
- The track controls are grayed out.
- The MIDI parts are locked.

- You can still adjust the level and panning, make EQ settings, and adjust the effect sends.
- The **Sampler Control** section in the lower zone of the **Project** window is disabled.

NOTE

The audio file is saved in the **Freeze** folder that can be found in the following location:

- Windows: within the **Project** folder
- macOS: **User/Documents**

AFTER COMPLETING THIS TASK

To unfreeze a frozen track, click **Freeze Channel** again.

RELATED LINKS

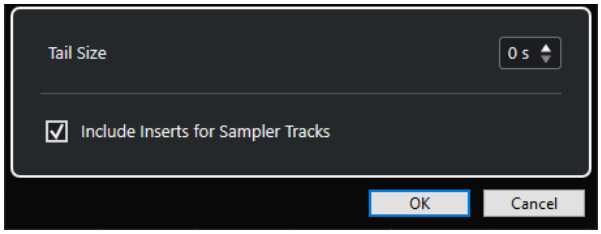
Freeze Channel Options Dialog for Sampler Tracks on page 586
Unfreeze Channel Options Dialog for Sampler Tracks on page 587
Freezing Multiple Tracks on page 166

Freeze Channel Options Dialog for Sampler Tracks

The **Freeze Channel Options** dialog allows you to specify exactly what should happen if you freeze a sampler track.

To open the **Freeze Channel Options** dialog, select the sampler track, and do one of the following:

- In the top **Inspector** section, click **Freeze Channel**.
- Select **Edit** > **Freeze/Unfreeze** > **Selected Tracks**.
- Right-click the selected track, and from the context menu, select **Freeze/Unfreeze Selected Tracks**.



Tail Size

Allows you to set a tail size time to let sounds complete their normal release cycle.

Include Inserts for Sampler Tracks

Activate this option if you want to include insert effects on this channel when freezing the sampler track.

NOTE

You can still adjust level, pan, sends, and EQ.

Deactivate this option if you still want to be able to edit insert effects on this channel.

RELATED LINKS

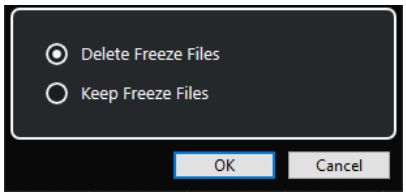
Freezing Sampler Tracks on page 585
Freezing Multiple Tracks on page 166
Unfreeze Channel Options Dialog for Sampler Tracks on page 587

Unfreeze Channel Options Dialog for Sampler Tracks

The **Unfreeze Channel Options** allows you to specify exactly what should happen if you unfreeze a sampler track.

To open the **Unfreeze Channel Options** dialog, select a frozen sampler track, and do one of the following:

- In the top **Inspector** section, click **Freeze Channel**.
- Select **Edit** > **Freeze/Unfreeze** > **Selected Tracks**.
- Right-click the selected track, and from the context menu, select **Freeze/Unfreeze Selected Tracks**.



Delete Freeze Files

Deletes the freeze files.

Keep Freeze Files

Keeps the freeze files in the **Freeze** folder that can be found in the following location:

- Windows: within the **Project** folder
- macOS: **User/Documents**

RELATED LINKS
Freeze Channel Options Dialog for Sampler Tracks on page 586
Freezing Multiple Tracks on page 166
Freezing Sampler Tracks on page 585

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/macOS Finder displays 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

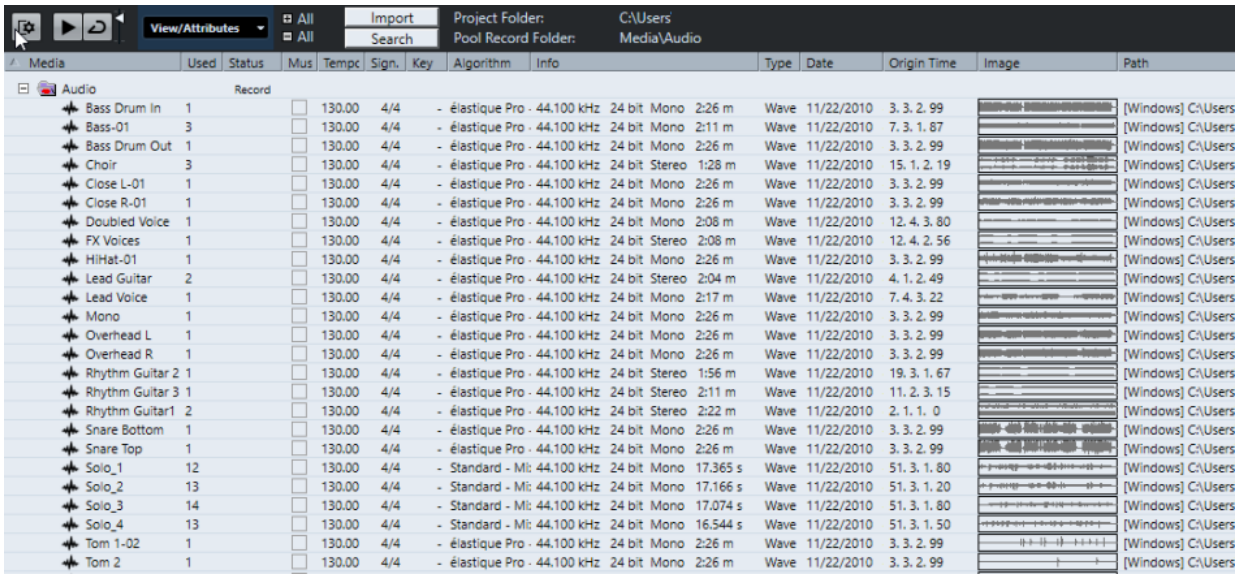
- Copying clips
- Auditioning clips
- Organizing clips
- Applying audio processing to clips

Pool Window

The **Pool** window allows you to manage the media files of the active project.

To open the **Pool**, do one of the following:

- On the **Project** window toolbar, click **Open Pool Window**. If this icon is not visible, right-click the toolbar and activate **Media & MixConsole Windows**.
- Select **Project** > **Pool**.
- Select **Media** > **Open Pool Window**.



Media	Used	Status	Mus	Tempo	Sign.	Key	Algorithm	Info	Type	Date	Origin Time	Image	Path
Audio		Record											
Bass Drum In	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users
Bass-01	3			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:11 m	Wave	11/22/2010	7. 3. 1. 87		[Windows] C:\Users
Bass Drum Out	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users
Choir	3			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Stereo 1:28 m	Wave	11/22/2010	15. 1. 2. 19		[Windows] C:\Users
Close L-01	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users
Close R-01	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users
Doubled Voice	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:08 m	Wave	11/22/2010	12. 4. 3. 80		[Windows] C:\Users
FX Voices	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Stereo 2:08 m	Wave	11/22/2010	12. 4. 2. 56		[Windows] C:\Users
HiHat-01	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users
Lead Guitar	2			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Stereo 2:04 m	Wave	11/22/2010	4. 1. 2. 49		[Windows] C:\Users
Lead Voice	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:17 m	Wave	11/22/2010	7. 4. 3. 22		[Windows] C:\Users
Mono	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users
Overhead L	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users
Overhead R	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users
Rhythm Guitar 2	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Stereo 1:56 m	Wave	11/22/2010	19. 3. 1. 67		[Windows] C:\Users
Rhythm Guitar 3	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Stereo 2:11 m	Wave	11/22/2010	11. 2. 3. 15		[Windows] C:\Users
Rhythm Guitar1	2			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Stereo 2:22 m	Wave	11/22/2010	2. 1. 1. 0		[Windows] C:\Users
Snare Bottom	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users
Snare Top	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users
Solo_1	12			130.00	4/4	-	Standard - Mi	44.100 kHz 24 bit Mono 17.365 s	Wave	11/22/2010	51. 3. 1. 80		[Windows] C:\Users
Solo_2	13			130.00	4/4	-	Standard - Mi	44.100 kHz 24 bit Mono 17.166 s	Wave	11/22/2010	51. 3. 1. 20		[Windows] C:\Users
Solo_3	14			130.00	4/4	-	Standard - Mi	44.100 kHz 24 bit Mono 17.074 s	Wave	11/22/2010	51. 3. 1. 80		[Windows] C:\Users
Solo_4	13			130.00	4/4	-	Standard - Mi	44.100 kHz 24 bit Mono 16.544 s	Wave	11/22/2010	51. 3. 1. 50		[Windows] C:\Users
Tom 1-02	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users
Tom 2	1			130.00	4/4	-	élastique Pro	44.100 kHz 24 bit Mono 2:26 m	Wave	11/22/2010	3. 3. 2. 99		[Windows] C:\Users

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 project contains one or more sampler tracks, a dedicated **Sampler Track** subfolder is created in the **Audio** folder. This subfolder contains all clips of the samples that you have loaded into **Sampler Control**.

Video folder

Contains all video clips that are in the project.

Trash folder

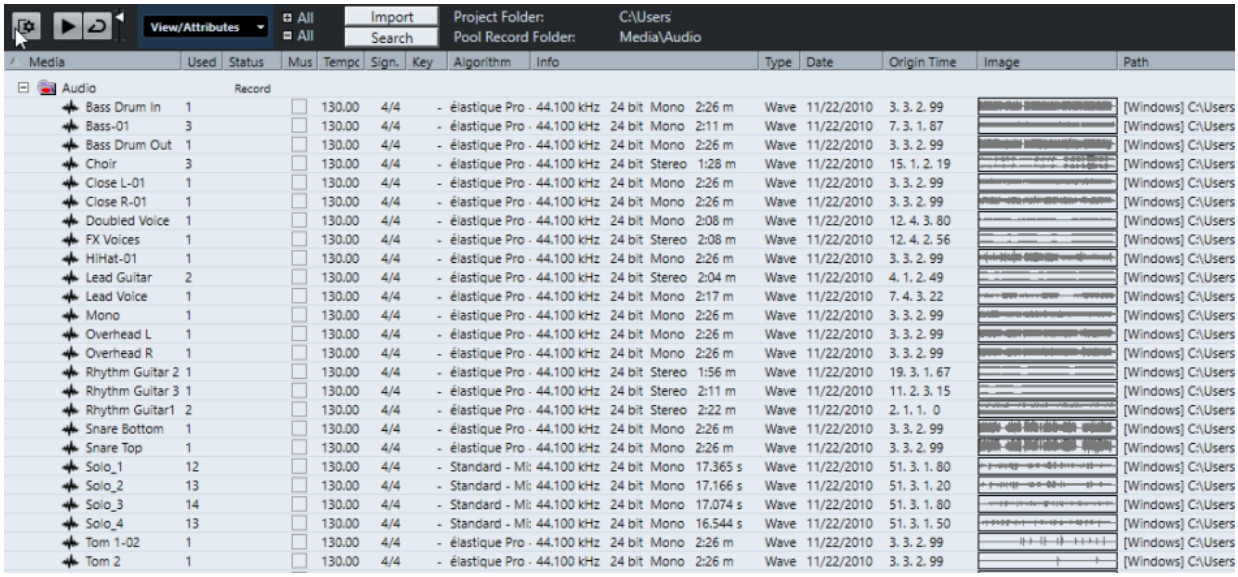
Contains unused clips that have been moved here from the hard disk for permanent removal.

NOTE

You cannot rename or delete these folders, but you can add any number of subfolders.

Pool Window Columns

The **Pool** window columns display information about the clips and regions.



The following columns are available:

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 **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 relates 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 quickly finding recently recorded clips.

Musical Mode

You can use **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, the bit depth, the number of channels, and the length.

For regions, it displays start and end times in frames.

For video clips, it displays frame rate, the resolution, the number of frames, and the 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).

In the Pool, you can change the value by editing the **Origin Time**. In the **Project** window, you can change the value by moving the event to a 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

Audio files may include this attribute, which is then shown in this column. It refers to the reel or tape from which the media was originally captured.

NOTE

You can rearrange the order of the columns by clicking a header and dragging left or right.

Pool Window Toolbar

The toolbar contains tools and settings for working in the **Pool**.

Show Info

Shows/Hides the info line.

Audition

Plays back the selected audio.

Audition Loop

Loops the playback until you deactivate **Audition**.

Audition Volume

Allows you to adjust the volume.

View/Attributes

Allows you to activate/deactivate the attributes that are displayed in the **Pool** window.

+/- All

Opens/Closes all folders.

Import

Allows you to import media files to the **Pool**.

Search

Allows you to search the **Pool** and connected disks for media files.

Project Folder

Displays the path to the folder of the active project.

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.

Info Line

The info line shows information about the event or part that you selected from 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**.

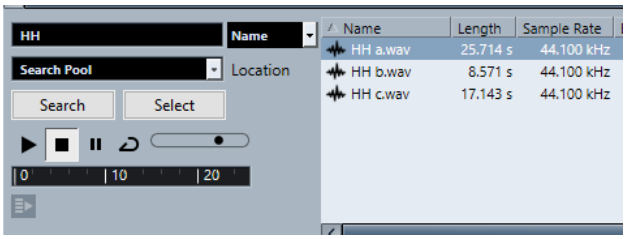
External Files

The number of files in the **Pool** that do not reside in the project folder (for example, video files).

Search Section

The search section allows you to search the **Pool** and connected disks for media files.

- To open the search section, activate **Search** on the **Pool** window toolbar.



The following elements are available:

Filter

Allows you to set a filter. Click the **Name** to open a pop-up menu to select one of the following search criteria:

- **Name**: partial names or wildcards (*)
- **Size**: less than, more than, equal, between (two values), in seconds, minutes, hours, and bytes
- **Bit Depth**: 8 bit, 16 bit, 24 bit, 32 bit, 32 bit float, 64 bit float
- **Channels**: mono, stereo, and from 3 to 16
- **Sample Rate**: various values, choose **Other** for free setting
- **Date**: various search ranges

Location

Allows you to define a search location.

Search

Starts the search.

Select/Import

Selects the file that you select from the result list in the **Pool** window. If the selected file is not located in the **Pool**, the label of the button changes to **Import**. Click **Import** to import the selected file into the **Pool**.

Previewer

Allows you to listen to the file that you selected from the result list.

Result list

Lists all the files that match the search criteria.

RELATED LINKS
Searching for Audio Files on page 597
Using the Extended Search Functionality on page 598

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. We recommend 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. Do one of the following:
   - Enter a new name, and press **Return**.
   - Select **Edit** > **Rename** > **Rename Media Files**,

RELATED LINKS
Missing Files on page 599

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 is named after the original, with a version number added to 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 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 485

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** onto an event, the clip in this event is replaced.

RELATED LINKS

Adjusting the Snap Point on page 485
Replacing Clips in Events on page 191
Cross-Hair Cursor on page 85

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

You can remove clips from the **Pool** without deleting the corresponding files from the hard disk.

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 for other projects, etc. This operation can be undone.

Deleting Files from the Hard Disk

You can delete clips from the **Pool** by deleting the corresponding 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**, 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 that are not used in the project in the **Pool**. This allows you to quickly remove all unused clips.

PREREQUISITE

The **Pool** window is open.

PROCEDURE

1. 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

  If the region is still in use, you are not warned.

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**.

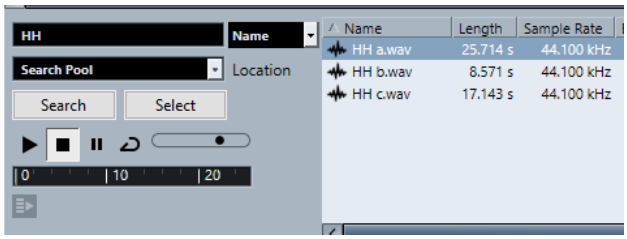
Searching for Audio Files

The search functions help you locate audio files in the **Pool**, on your hard disk, or on other media. The process is similar to a regular file search, with some additional options.

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 are looking for in the **Name** field.
   You can use partial names or wildcards (*).

   NOTE

   Only audio files of supported formats will be found.

3. Use the **Location** pop-up menu to specify where to search.
   The pop-up menu lists all of 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 includes 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.
   - To cancel the search, click **Stop**.

   When the search is finished, the search results are listed on the right.
   - To audition a file, select it from 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.

RELATED LINKS
Search Section on page 593

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 **Name** 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.

3. Select one of the search criteria from the pop-up menu.
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**.

RELATED LINKS
Search Section on page 593

Missing Files

If 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.

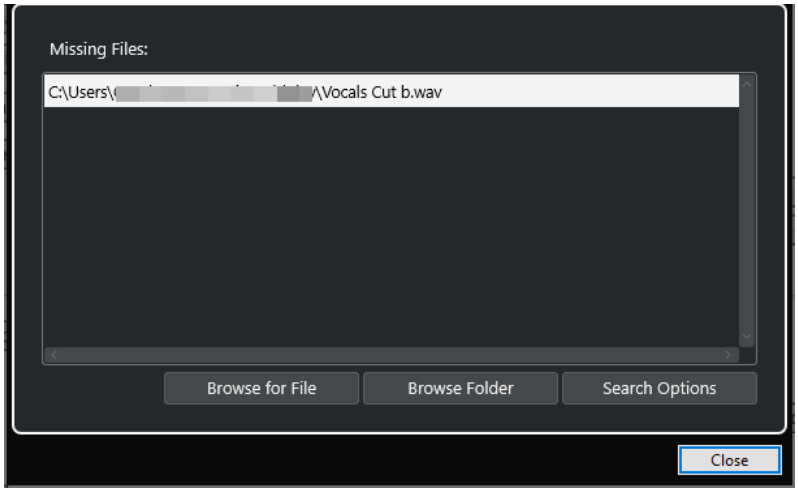
In the **Pool**, you can check which files are considered missing. This is indicated by a question mark in the **Status** column.

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 that contains the missing files.

Resolve Missing Files Dialog

- To open the **Resolve Missing Files** dialog, select **Media** > **Find Missing Files**.



The following elements are available:

Missing Files List

Lists the files that are missing from the project.

Browse for File

Opens a file dialog that allows you to locate and select the missing files manually.

Browse Folder

Opens a file dialog that allows you to specify the folder in which the missing files can be found.

Use this method if you have renamed or moved the folder that contains the missing file, and if the file still has the same name.

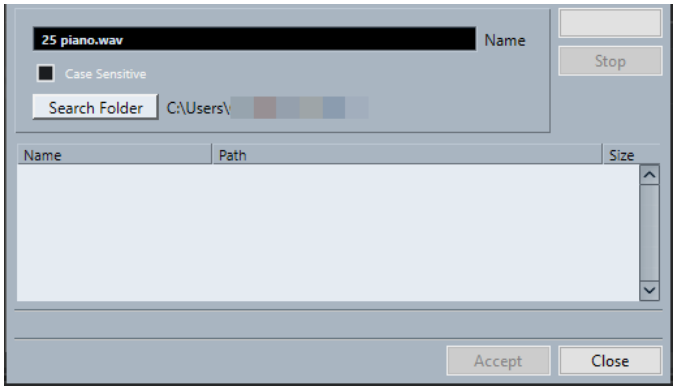
Search Options

Opens the **Search for File** dialog.

RELATED LINKS
Locating Missing Files on page 601
Search for File Dialog on page 600

Search for File Dialog

- To open the **Search for File** dialog, select **Media** > **Find Missing Files**, and in the **Resolve Missing Files** dialog, click **Search Options**.



The following elements are available:

Name

Displays the name of the file for which Cubase searches. This is the name of the file that you selected in the **Resolve Missing Files** dialog, but you can also enter a file name manually. Activate **Case Sensitive** to search for file names with the entered spelling.

Search Folder

Opens a dialog where you can specify the folder that is searched.

Files list

Lists the found files.

Start

Starts the search.

Stop

Stops the search.

Accept

If the file was found, select it from the list, and click **Accept**. Cubase then tries to map all other missing files automatically.

Close

Closes the dialog.

RELATED LINKS
Resolve Missing Files Dialog on page 599
Locating Missing Files on page 601

Locating Missing Files

PROCEDURE

1. Select **Media** > **Find Missing Files**.
2. In the **Resolve Missing Files** dialog, do one of the following:
   - To navigate to the missing file, click **Browse for File**.
   - To specify the directory in which the missing file can be found, click **Browse Folder**.
   - To open the **Search for File** dialog, click **Search Options**.

RELATED LINKS
Search for File Dialog on page 600
Resolve Missing Files Dialog on page 599

Reconstructing Missing Edit Files

If a missing file cannot be found, this is normally indicated by a question mark in the **Status** column of the **Pool**. However, if the missing file is an edit file (a file that is created when you process audio and that is stored in the **Edits** folder within the project folder), it may be possible for the program to reconstruct the edits for 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 reconstructible 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** via key commands, the **Audition** button, or by clicking in the waveform image for a clip.

- Use key commands.

  If you activate **Playback Toggle Triggers Local Preview** 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 **Main Mix** (the default output) bus, bypassing the settings of the audio channel, effects, and EQs.

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 in the **Media** column.
- To open a certain region of a clip in the **Sample Editor**, double-click a region icon in the **Media** column.

  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 485
Sample Editor on page 464

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)
- 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 bit, 16 bit, 24 bit, 32 bit, 32 bit float, or 64 bit float
- 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 1052
Importing ReCycle Files on page 291
Supported Compressed Audio File Formats on page 288
Video File Compatibility on page 1079

Importing Audio CDs into the Pool

You can import tracks or sections of tracks from an audio CD 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**.

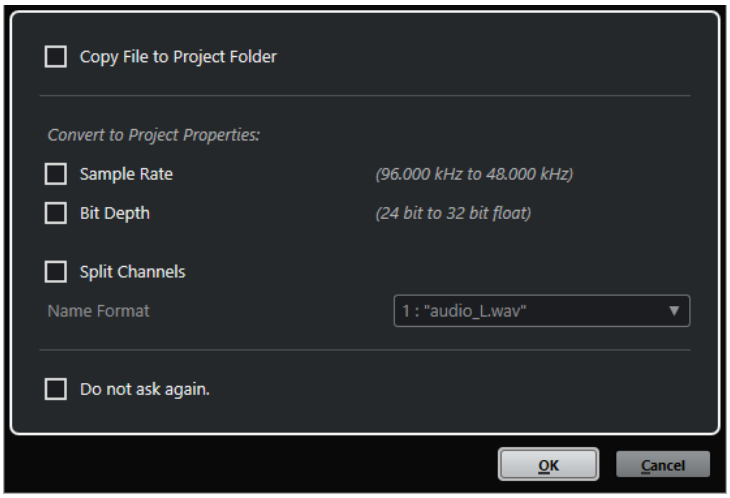
- To import an audio CD to the **Pool**, select **Media** > **Import Audio CD**.

RELATED LINKS
Importing Audio CD Tracks on page 288

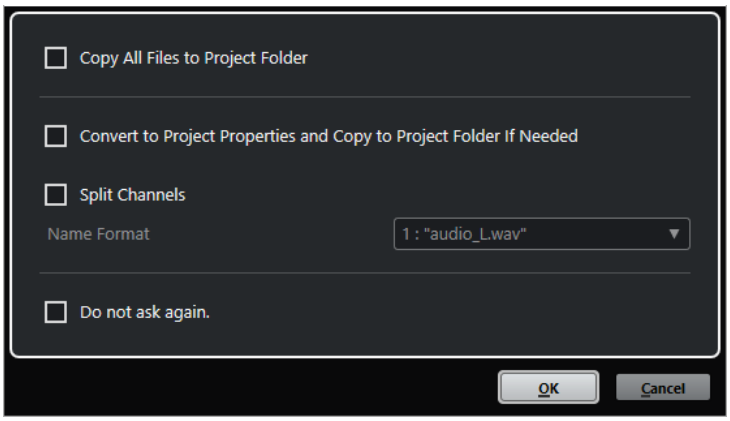
Import Options Dialog

The **Import Options** dialog allows you to specify how audio files are imported into the **Pool**.

- If you select a file in the **Import Medium** dialog and click **Open**, the **Import Options** dialog opens.



Import Options dialog for single file import



Import Options dialog for multipe file import

Copy File to Project Folder/Copy All Files to Project Folder

Copies the audio file to the **Audio** folder of the project and causes the clip refer to the copy.

Deactivate this option if you want the clip to refer to the original file in the original location. In this case, it is marked as “external” in the **Pool**.

Convert to Project Settings/Convert to Project Settings and Copy to Project Folder If Needed

Converts the imported file if the sample rate or the bit depth differ from the settings in the **Project Setup** dialog. For single file import, you can choose which properties are converted.

Split Channels

Splits stereo or multi-channel audio files into a corresponding number of mono files, one for each channel, and copies the imported files to the **Audio** folder of the project.

The split files are inserted into the project and into the **Pool** as separate mono tracks.

The **Name Format** pop-up menu allows you to specify the names of the split files. This allows for compatibility with other products when exchanging audio files.

Do not ask again

Always applies the current settings without opening the dialog again. You can reset this option in the **Preferences** dialog (**Editing—Audio** page).

RELATED LINKS
Pool Window Columns on page 590
Converting Files on page 607

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. Optional: 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 484

Changing the Pool Record Folder

All audio clips that you record in the project are saved 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 intended for organizing your files in the **Pool** only. 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 is saved in this folder.

Organizing Clips and Folders

If you accumulate a large number of clips in the **Pool**, it can be difficult to 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 folder 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** > **Direct Offline Processing**, and select a processing method.

RESULT

A waveform symbol indicates that the clips have been processed.

RELATED LINKS

Direct Offline Processing on page 435

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** > **Direct Offline Processing**.
3. Select the action that you want to remove, and click **Delete**.

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 permanently changes the selected audio files in the **Pool**. It 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 minimizing, the file references in the stored project 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 107

Converting Files

In the **Pool**, you can convert files to another format.

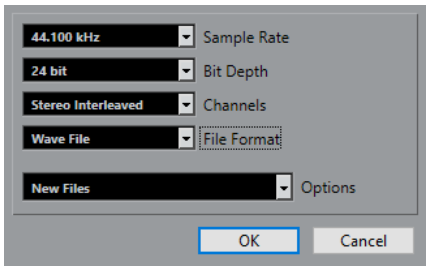
PROCEDURE

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 changes 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.

Bit Depth

Allows you to convert to 16 bit, 24 bit, 32 bit, 32 bit float, or 64 bit float.

Channels

Allows you to convert to mono or stereo interleaved.

File Format

Allows you to convert to Wave, AIFF, FLAC, 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 this option if you want your audio clips to refer to the converted file but want to keep the original file on disk. This is useful if the file is used in other projects, for example.

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 and Media Rack

You can manage media files on your computer as well as presets from multiple sources from within the **MediaBay** or the **Media** rack.

The **MediaBay** window offers advanced functions for working with media files and managing database items. To show the media files on your computer in the **MediaBay**, you must scan the folders or volumes that contain the files so that these are added to the database.

The **Media** rack in the right zone of the **Project** window allows you to access some of the most important **MediaBay** functions from within a fixed zone of the **Project** window. For quick access to specific media files, the **Media** rack allows you to add specific folders on your computer as favorites. Media files within the favorite folders that you add to the **Media** rack are automatically scanned and added to the database.

RELATED LINKS
MediaBay Window on page 621
Scanning Folders on page 625
Media Rack in Right Zone on page 610
Adding Favorites Using the Favorites Page on page 619
Adding Favorites Using the File Browser Page on page 620

Media Rack in Right Zone

The **Media** rack in the right zone of the **Project** window allows you to access the **MediaBay** functions from within a fixed zone of the **Project** window.

- To open the **Media** rack in the right zone, click **Show/Hide Right Zone** on the **Project** window toolbar. At the top of the right zone, click the **Media** tab.

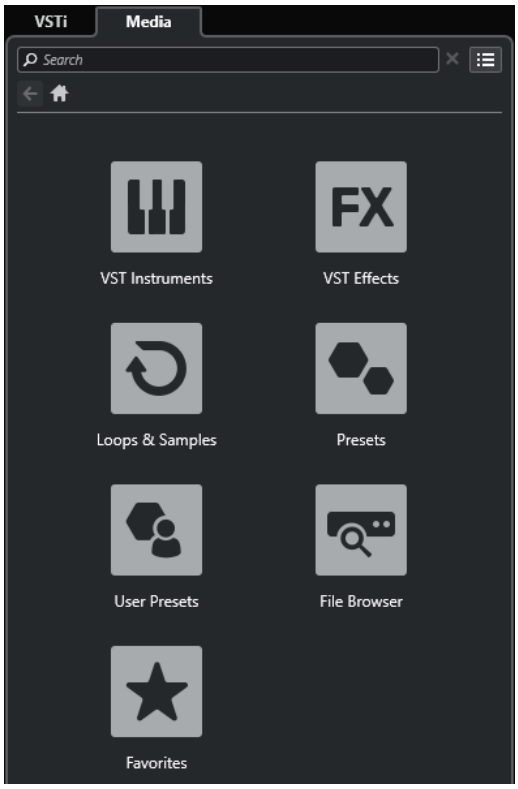
The **Media** rack opens on the **Home** page that features different tiles. These tiles correspond to the available media types.

RELATED LINKS
Showing/Hiding Zones on page 36
Home Page on page 610
Project Window Toolbar on page 38

Home Page

The **Home** page gives you access to the tiles that correspond to the available media types, to the **Favorites**, and to the **File Browser**.

- To open the **Home** page, click the **Home** navigation control on the **Media** rack.



The following tiles are available:

VST Instruments

Shows VST instruments and instrument presets.

VST Effects

Shows VST effects and effect presets.

Loops & Samples

Shows audio loops, MIDI loops, or instrument sounds ordered by content set.

Presets

Shows track presets, strip presets, pattern banks, FX chain presets, and VST FX presets.

User Presets

Shows track presets, strip presets, pattern banks, FX chain presets, VST FX presets, and instrument presets that are listed in the **User Content** folder.

Favorites

Shows your favorite folders and allows you to add new favorites. The folder content is automatically added to the **MediaBay** database.

File Browser

Shows your file system and the pre-defined folders **Favorites**, **This Computer**, **VST Sound**, **Factory Content**, and **User Content**, where you can search for media files and access them immediately.

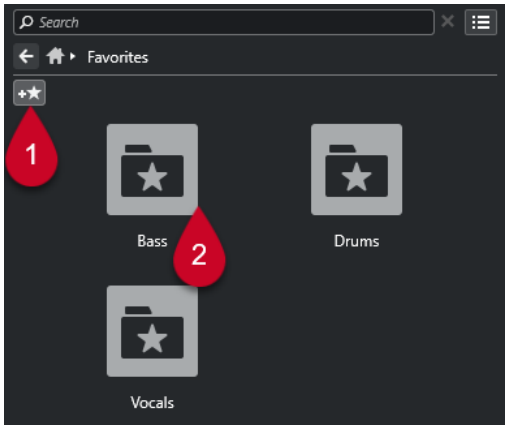
RELATED LINKS

Loading Instrument Presets on page 648
Loading Loops and Samples on page 647
Loading Track Presets on page 647
Loading Effect Plug-In Presets on page 648

Loading FX Chain Presets on page 649
Loading Strip Presets on page 649
Loading Pattern Banks on page 649
Adding Favorites Using the Favorites Page on page 619
Adding Favorites Using the File Browser Page on page 620

Favorites Page

The **Favorites** page allows you to add your own favorite folders to the **Media** rack.



1 **Add Favorite**

Opens a file dialog where you can navigate to the location of a folder and add it as a favorite folder.

2 **Favorite folders**

The folders that you added as favorites are displayed as tiles on the **Favorites** page.

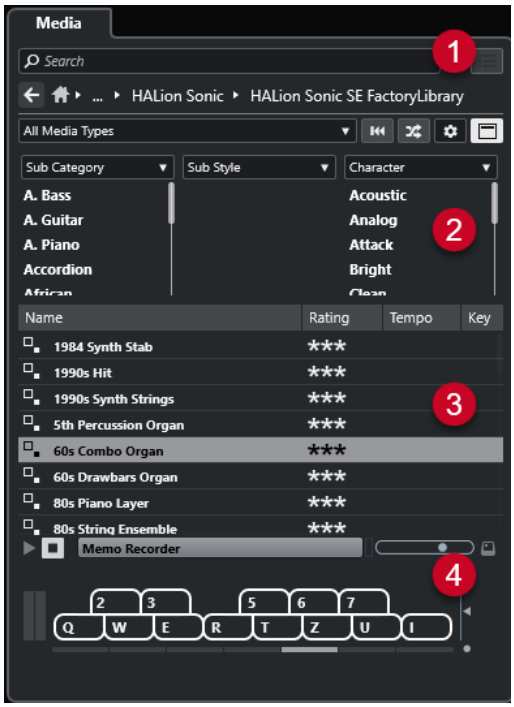
- To show the content of a folder, click it.
- To delete a folder from the **Favorites** page, click its close button.

RELATED LINKS
Adding Favorites Using the Favorites Page on page 619

Results Page

The **Results** page shows all media files that are found in the defined favorite folder.

- To open the **Results** page, click the **Show All Results** navigation control on the **Media** rack.



The following options are available:

1 **Media Rack navigation controls**

Allow you to navigate to specific folders and to filter the **Results** list.

2 **Attribute filter**

Allows you to view and edit some of the standard file attributes found in your media files.

3 **Results list**

Shows all media files that are found in the selected folder and allows you to select a media file.

4 **Previewer**

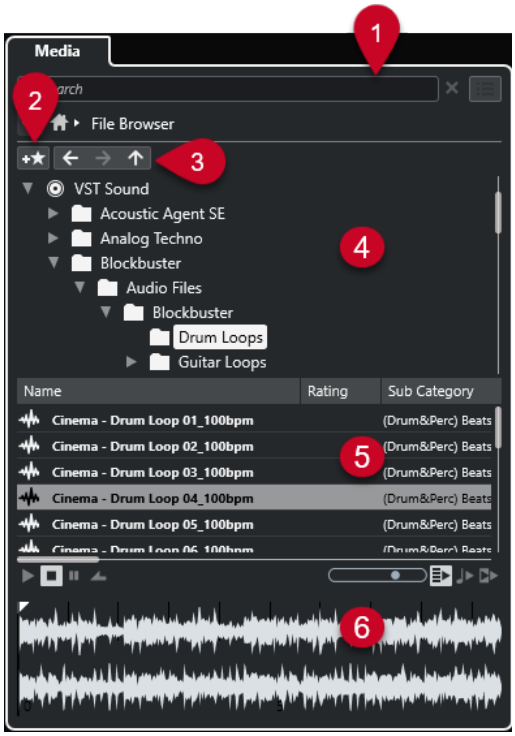
Allows you to preview the selected media file.

RELATED LINKS
Media Rack Navigation Controls on page 617
Setting up the Results List Columns on page 627
Attribute Inspector on page 642
Results Section on page 627
Previewer Section on page 632

File Browser Page

The **File Browser** page shows all media files that are found in the **File Browser**.

- To open the **File Browser** page, go to the **Home** page of the **Media** rack, and click **File Browser**.



The following options are available:

1 **Media Rack navigation controls**

Allow you to navigate to specific folders and to filter the **Results** list.

2 **Add Favorite**

Allows you to add the selected folder as a favorite folder.

3 **Back/Forward/Up**

Up navigates to the parent folder. **Back** navigates to the previously used folder. **Forward** navigates to the most recent folder.

4 **File browser**

Allows you to browse selected folders.

5 **Results list**

Shows all supported media files that are found in the selected folder and allows you to select a media file.

6 **Previewer**

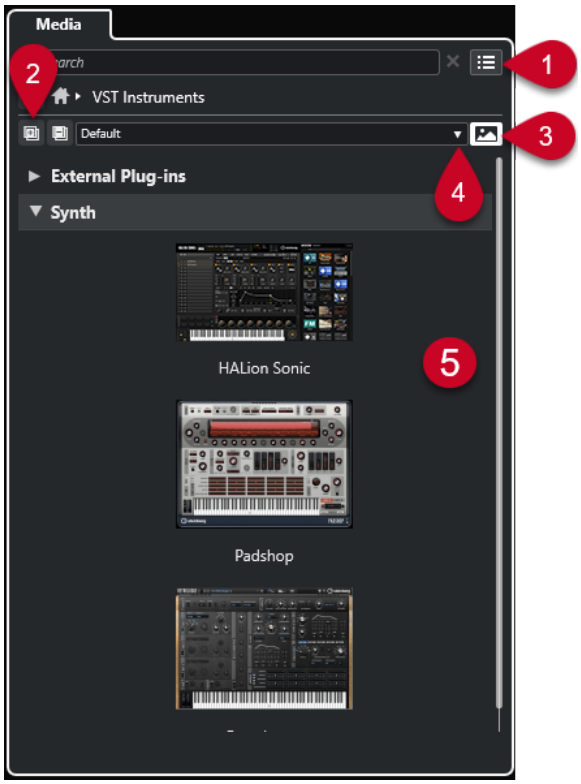
Allows you to preview the selected media file.

RELATED LINKS
Media Rack Navigation Controls on page 617
File Browser Section on page 624
Results Section on page 627
Previewer Section on page 632

VST Instruments Page

The **VST Instruments** page shows all VST instruments of the selected collection.

- To open the **VST Instruments** page, go to the **Home** page of the **Media** rack, and click **VST Instruments**.



The following options are available:

1 **Media Rack navigation controls**

Allow you to navigate to specific folders and to filter the **Results** list.

2 **Expand All/Collapse All**

Expands/Collapses all results.

3 **Show/Hide VST Plug-in Pictures**

Shows/Hides the pictures of the VST instrument control panels.

4 **Plug-in Collections and Options**

- **Default** activates the default collection.
- **Sort By Category** sorts the collection by category. This is available for the **Default** collection only.
- **Sort By Vendor** sorts the collection by vendor. This is available for the **Default** collection only.
- **Plug-in Manager** opens the **Plug-in Manager** that allows you to create new plug-in collections. These will be listed in the **Plug-in Collections and Options** menu below the **Default** collection.

5 **Plug-in list**

Shows the plug-ins of the selected collection.

RELATED LINKS

VST Plug-in Manager Window on page 683
Adding Pictures of VST Instruments to the Media Rack on page 620

VST Effects Page

The **VST Effects** page shows the VST effects of the selected collection.

- To open the **VST Effects** page, go to the **Home** page of the **Media** rack, and click **VST Effects**.

The following options are available:

1 **Media Rack navigation controls**

Allow you to navigate to specific folders and to filter the **Results** list.

2 **Expand All/Collapse All**

Expands/Collapses all results.

3 **Show VST Plug-in Pictures/Hide VST Plug-in Pictures**

Shows/Hides the pictures of the VST effect control panels.

4 **Plug-in Collections and Options**

- **Default** activates the default collection.
- **Sort By Category** sorts the collection by category. This is available for the **Default** collection only.
- **Sort By Vendor** sorts the collection by vendor. This is available for the **Default** collection only.
- **Plug-in Manager** opens the **Plug-in Manager** that allows you to create new plug-in collections. These will be listed in the **Plug-in Collections and Options** menu below the **Default** collection.

5 **Plug-in list**

Shows the plug-ins of the selected collection.

RELATED LINKS
VST Plug-in Manager Window on page 683
Adding Pictures of VST Effects to the Media Rack on page 621

Media Rack Navigation Controls

The navigation controls allow you to navigate to files and folders in the **Media** rack.

The following controls allow you to perform a text search, and to show the results on the current page.

1 **Search**

Allows you to search media files by name or by attribute.

2 **Reset Search**

Allows you to reset the search.

3 **Show All Results**

Shows the **Results** page for a selected tile. If no tile is selected, all media files are shown.

The following controls allow you to navigate from the current page to other pages.

1 **Back**

Allows you to navigate back to the previous page.

2 **Home**

Allows you to navigate back to the **Home** page.

3 **Breadcrumb path**

Shows the path to the current page and allows you to navigate back to the previous page.

The following controls allow you to set up and modify the **Results** page.

1 **Select Media Types**

Allows you to select the media types that are displayed on the **Results** page.

2 **Shuffle Results**

Shuffles the **Results** page.

3 **Reset Attribute Filter**

Lights up if an attribute filter is set. Click this button to reset the attribute filter.

4 **Set up Result Columns**

Allows you to specify which attribute columns are displayed on the **Results** page.

5 **Show/Hide Attribute Filters**

Shows/Hides the **Attribute Filters** section.

RELATED LINKS
Home Page on page 610
Results Page on page 612
Media File Attributes on page 640

Working with the Media Rack

The **Media** rack in the right zone of the **Project** window allows you to search for supported media files and included VST instruments, and to add them to your project.

The controls on the different pages of the **Media** rack allow you to browse, filter, select, and preview your media files.

The **Favorites** page and the **File Browser** page allow you to add folders where your media files are located as **Favorites**. This helps you to quickly navigate to these media files.

The tiles and controls on the different pages of the **Media** rack allow you to browse, filter, select, and preview the content.

Once you have located the media file, the instrument, or the preset that you want to use and selected it in the **Results** list, you can insert it into your project by using drag and drop, by using the context menu options, or by double-clicking.

RELATED LINKS
Media Rack in Right Zone on page 610
Results Page on page 612

Adding VST Instruments to Projects

You can use the **Media** rack to add VST instruments to your project.

PROCEDURE

1. In the **Media** rack, click the **VST Instruments** tile.
2. Drag an instrument on the track list or on the event display.

   NOTE

   To exchange the VST instrument of an instrument track, drag the instrument from the **Media** rack, and drop it on the top section of the instrument track **Inspector**. Note that you must manually update the track name if needed.

RELATED LINKS
Loading Instrument Presets on page 648

Adding VST Effects to Projects

You can use the **Media** rack to add VST effects to your project.

PROCEDURE

1. In the **Media** rack, click the **VST Effects** tile.

2. Do one of the following:
   - To create an FX channel track, drag an effect on the track list.
   - To add the effect to an audio-related track, drag the effect from the **Media** rack, and drop it in the **Inserts** or **Sends** section of the track **Inspector**.
   - To add the effect to an audio-related channel, drag the effect from the **Media** rack, and drop it in the **Inserts** or **Sends** section of the **MixConsole** in the lower zone of the **Project** window or the **Channel Settings** window.

RELATED LINKS
Loading Effect Plug-In Presets on page 648

Applying Track Presets

You can use the **Media** rack to add track presets to your project.

PROCEDURE

1. In the **Media** rack, click the **Presets** tile.
2. Click **Track Presets**.
3. Click **Audio**, **VST Instruments**, **MIDI**, **Multi**, or **Sampler**, depending on the track type.
4. Do one of the following:
   - Drag a track preset on the **Inspector** or into the track list for the corresponding track type.
   - Drag a track preset below the track list to add a new track with the track preset loaded.

   NOTE

   To exchange the track preset of a track, drag the preset from the **Media** rack, and drop it on the track in the track list. Note that you must manually update the track name if needed.

RESULT
The track preset is applied.

Adding Favorites Using the Favorites Page

You can add favorite folders to the **Favorites** page. This allows you to directly access media files in specific folders.

PROCEDURE

1. In the **Media** rack, click the **Favorites** tile.
2. At the top left of the page, click **Add Favorite**.
3. Select the folder that you want to add as a **Favorite**.
4. Click **OK**.

RESULT

- The favorite folder is added to the database.
- On the **Favorites** page, a new tile with the specified name is added.
- In the **File Browser**, a new folder with the specified name is added to the **Favorites** folder.

RELATED LINKS
Favorites Page on page 612

Adding Favorites Using the File Browser Page

You can add favorite folders using the **File Browser** page. This allows you to directly access media files in specific folders.

PROCEDURE

1. In the **Media** rack, click the **File Browser** tile.
2. In the **File Browser**, navigate to the folder that you want to add as a favorite, and select it.
3. Do one of the following:
   - At the top left of the page, click **Add Favorite**.
   - Right-click the folder, and, from the context menu, select **Add Favorite**.
4. In the **Add Favorite** dialog that opens, enter a name for the folder.
5. Click **OK**.

RESULT

- The favorite folder is added to the database.
- In the **File Browser**, a new folder with the specified name is added to the **Favorites** folder.
- On the **Favorites** page, a new tile with the specified name is added.

RELATED LINKS
File Browser Page on page 613

Adding Pictures of VST Instruments to the Media Rack

Pictures of VST instruments from other vendors are not loaded by default. However, you can manually add them to the **Media** rack.

PREREQUISITE

You have added a VST instrument of another vendor as a rack or a track instrument.

PROCEDURE

1. Open the control panel of the VST instrument.
2. On the control panel, click **Add VST Plug-in Picture to Media Rack**.

RESULT

The picture of the VST instrument is shown in the **Media** rack.

RELATED LINKS
Adding VST Instruments on page 664
VST Instrument Control Panel on page 665

Adding Pictures of VST Effects to the Media Rack

Pictures of VST effects from other vendors are not loaded by default. However, you can manually add them to the **Media** rack.

PREREQUISITE

You have added a VST effect from another vendor.

PROCEDURE

1. Open the control panel of the VST effect.
2. On the control panel, click **Add VST Plug-in Picture to Media Rack**.

RESULT

The picture of the VST effect is shown in the **Media** rack.

RELATED LINKS

Adding Insert Effects on page 408
Effect Control Panel on page 423

MediaBay Window

To open the **MediaBay** in a separate window, do one of the following:

- Select **Media** > **MediaBay**.
- Press **F5**.

The **MediaBay** is divided into the following sections:

1 File Browser

Allows you to scan specific folders in your file system, and to add favorites.

2 Toolbar

Contains tools and shortcuts for settings and functions in the **MediaBay**, and allows you to switch between the previously defined favorite locations. Favorites in the **MediaBay** window are not automatically scanned.

3 **Filters**

Allows you to filter the **Results** list by applying a logical or an attribute filter.

4 **Results**

Displays all supported 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**

Allows you to view, edit, and add media file attributes or tags.

RELATED LINKS
File Browser Section on page 624
MediaBay Toolbar on page 622
Adding Favorites on page 626
Scanning Folders on page 625
Filters Section on page 637
Results Section on page 627
Previewer Section on page 632
Attribute Inspector on page 642
Setting up the MediaBay on page 624

MediaBay Toolbar

The toolbar contains tools and shortcuts for settings and functions in the **MediaBay**.

Navigation

Back

Navigates to the previously used folder.

Forward

Navigates to the most recent folder.

Up

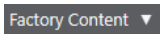
Navigates to the parent folder.

Favorites

Add Favorite

Allows you to add the selected folder as a favorite folder.

Select Defined Favorite



Allows you to select a **Favorite** to quickly browse to the files you are looking for.

Include Folders and Subfolders

Activate this to show the content of folders and subfolders.

Left Divider

Left Divider

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

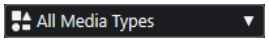
Text Search

Search

Allows you to search media files by name or by attribute.

Media Types Filter

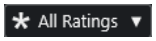
Select Media Types



Allows you to select the media types that are displayed on the **Results** page.

Rating Filter

Rating Filter



Filters files according to their rating.

Reset Result Filters

Reset Filters

Allows you to reset the filters.

Results

Results

Shows the results.

Update Results

Updates the results.

Shuffle Results

Shuffles the **Results** page.

Set up Result Columns

Allows you to set up the result columns.

Attribute Counter

Attribute Counter

Shows the number of attributes that are being updated.

Right Divider

Right Divider

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

MediaBay Settings

MediaBay Settings

Opens the **MediaBay** settings.

Window Zone Controls

Show/Hide Left Zone

Shows/Hides the left zone of the window.

Show/Hide Lower Zone

Shows/Hides the lower zone of the window.

Show/Hide Right Zone

Shows/Hides the right zone of the window.

Set up Window Layout

Allows you to set up the window layout.

Setting up the MediaBay

You can show and hide the different sections of the **MediaBay**. This saves screen space and allows you to display only the information that you need.

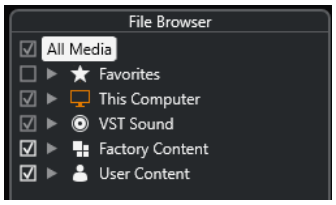
PROCEDURE

1. Click **Set up Window Layout**.
2. Activate/Deactivate the checkboxes for the sections that you want to show/hide.
3. Click outside the pane to exit the setup mode.

File Browser Section

The **File Browser** section shows your file system with the pre-defined folders **Favorites**, **This Computer**, **VST Sound**, **Factory Content**, and **User Content**.

- To open the **File Browser** section in the **MediaBay**, click **Set up Window Layout**, and activate **File Browser**.



To show the supported media files in the **Results** section of the **MediaBay**, you must scan all folders that you want to include in the search.

You can also add favorite folders. All media files contained in a **Favorite** are automatically scanned.

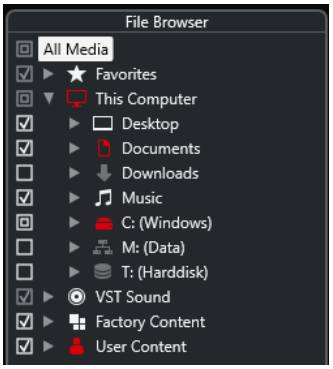
RELATED LINKS
Scanning Folders on page 625
Adding Favorites on page 626

Scanning Folders

To include specific folders in the **MediaBay** search, you must scan them.

PROCEDURE

1. In the **File Browser** section of the **MediaBay**, navigate to the folder that you want to include in the scan.
2. Activate the checkbox for the folder to activate the scan.



RESULT

All files that are found in the scanned folder are shown in the **Results** list. The scan result is saved in a database file.

The state of the checkbox helps you to identify which folders and subfolders are scanned:

- A square indicates that at least one subfolder is excluded from the scan.
- A checkmark indicates that all subfolders are included in the scan.
- An empty checkbox indicates that all folders and subfolders are excluded from the scan.

The color of the folder indicates its availability:

- Red indicates that a folder is currently being scanned.
- White indicates that all subfolders have been scanned.

NOTE

Please wait until the **MediaBay** completes the scan before you resume your work.

Adding Favorites

You can add favorite folders using the **File Browser** section.

PROCEDURE

1. In the **File Browser** section, navigate to the folder that you want to add as a favorite, and select it.
2. Right-click the folder or the volume, and, from the context menu, select **Add Favorite**.
3. In the **Add Favorite** dialog that opens, enter a name for the folder.
4. Click **OK**.

RESULT

- In the **File Browser** section, a new folder with the specified name is added to the **Favorites** folder.
- In the **Favorites** section, the added favorite is available in the **Select Defined Favorite** pop-up menu.
- In the **Media** rack in the right zone of the **Project** window, a new tile with the specified name is added to the **Favorites** page.

NOTE

Favorites in the **MediaBay** window are not automatically scanned.

AFTER COMPLETING THIS TASK

To remove a **Favorite**, select it in the **Favorites** tree of the **File Browser** section, open the context menu, and select **Remove Favorite**.

RELATED LINKS

Scanning Folders on page 625

Refresh Views

If you change previously scanned folders by adding or removing files with Cubase closed, you must rescan the corresponding media folders. This also applies if you modified attributes of your user content while using another program.

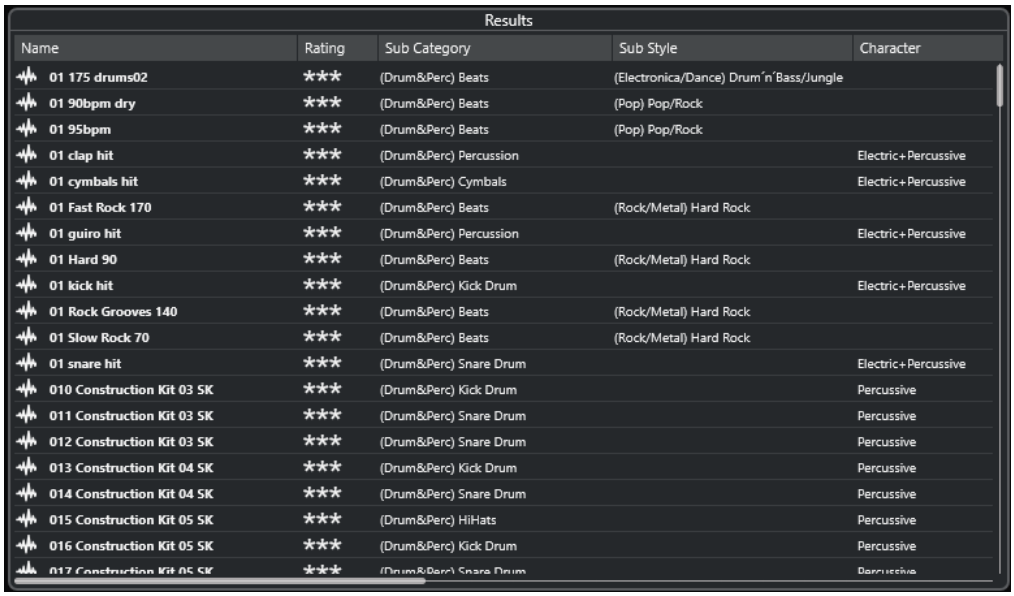
If you have applied changes to your content and want the changes to be displayed in the **MediaBay**, you must refresh the views of the corresponding media folders.

- To refresh a folder, in the **File Browser** section of the **MediaBay**, right-click the folder, and select **Refresh Views**.
- To display a new drive, in the **File Browser** section of the **MediaBay**, right-click the parent node, and select **Refresh Views**. You can then scan the drive for media files.
- To update the scan state of the folders after modifying the volume database with another program, right-click the volume database, and select **Refresh Views**.

Results Section

The **Results** list shows all the media files that are found in the selected folder of the **File Browser**.

- To show media files in the **Results** section, you must select a scanned folder in the **File Browser** section of the **MediaBay**.



NOTE

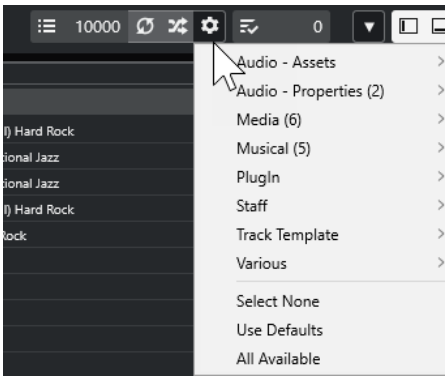
You can set the maximum number of files to be displayed in the **Results** list in the **MediaBay Settings**.

Setting up the Results List Columns

For each media type, or for combinations of media types, you can specify the attribute columns to be displayed in the **Results** list.

PROCEDURE

1. In the **Results** section, select the media types for which you want to make settings.
2. On the **MediaBay** toolbar, click **Set up Result Columns**, and do one of the following:
   - To show specific columns, activate or deactivate the respective options on the submenus.
   - To remove all columns except **Name**, select **Select None**.
   - To show the default columns, select **Use Defaults**.
   - To show all columns with set attributes, select **All Available**.



NOTE

If **Allow Editing in Results List** is activated in the **MediaBay Settings**, you can also edit attributes in the **Results** list. Otherwise, this is only possible via the **Attribute Inspector**.

RELATED LINKS
Setting up the MediaBay on page 624
Attribute Inspector on page 642

Managing Media Files in the Results List

- To move or to copy a file from the **Results** list to another location, drag it to another folder in the **File Browser** section.
- To change the order of the columns in the **Results** list, click 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/macOS Finder, it is still displayed in the **Results** list, although it is no longer available to the program. To remedy this, rescan the corresponding folder.

Shuffling the Results List

You can display the **Results** list entries in a random order.

- To shuffle the **Results** list, click **Shuffle Results** in the **MediaBay** toolbar.

Finding the Location of a File

You can display the location of a file on your system in the File Explorer/macOS Finder.

NOTE

This function is not available 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

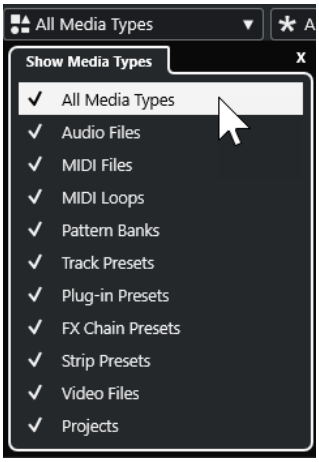
The File Explorer/macOS Finder opens, and the corresponding file is highlighted.

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 **MediaBay** toolbar, open the **Show Media Types** selector.



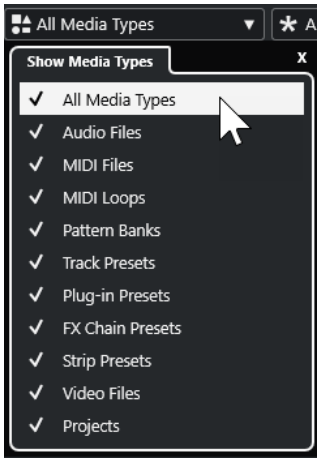
2. Activate the media types that you want to be displayed in the **Results** list.

RESULT

The files are filtered by the selected media type.

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

Shows all audio files. The supported formats are `.wav`, `.w64`, `.aiff`, `.aifc`, `.rex`, `.rx2`, `.mp3`, `.mp2`, `.ogg`, `.wma` (Windows only).

MIDI Files

Shows all MIDI files (file name extension `.mid`).

MIDI Loops

Shows all MIDI loops (file name extension `.midiloop`).

Pattern Banks

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 document **Plug-in Reference**.

Track Presets

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

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

Shows all strip presets (file name extension `.strippreset`). These presets contain channel strip effect chains.

FX Chain Presets

Shows all effect chain presets (file name extension `.fxchainpreset`). These presets contain insert effect chains.

Video Files

Shows all video files.

Projects

Shows all project files (from Cubase, Nuendo): `.cpr`, `.npr`.

RELATED LINKS
Pattern Banks Previewer on page 637
Track Presets on page 181
Saving/Loading Strip Presets on page 385
Saving/Loading EQ Presets on page 378
Saving/Loading FX Chain Presets on page 375
Video File Compatibility on page 1079

Filtering According to Rating

With the **Rating Filter**, you can filter files according to their rating.

NOTE

The **Rating Filter** is not available in the **Media** rack in the right zone.

PROCEDURE

- In the **Rating Filter** section of the **MediaBay** toolbar, select a value from the **Rating Filter** pop-up menu.

Performing a Text Search

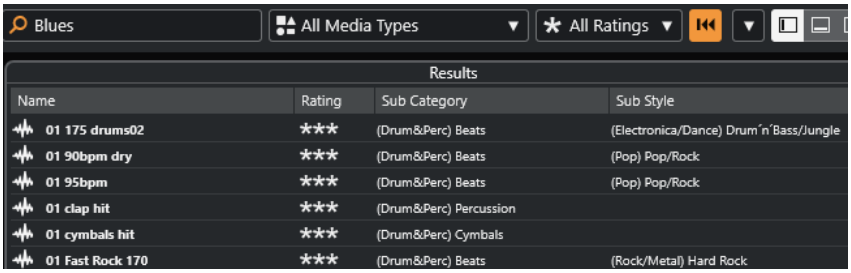
You can perform a text search of the **Results** list. If you enter text in the text search field on the **MediaBay** toolbar, only media files whose attributes match the entered text are displayed.

NOTE

The **Search MediaBay** field has the same function as the **matches** operator of the logical filter. However, the search is applied to all file attributes.

- Click 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 will contain loops called “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 you can use boolean operators.



- To reset the text search, delete the text, or click **Reset Filters**.

RELATED LINKS
Logical Filter on page 637

Boolean Text Search

You can perform advanced searches, using boolean operators or wildcards.

You can use the following elements:

And [+]

[a and b]

When entering strings separated by “and” (or a plus sign), all files that contain both a and b are found.

[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 that contain either a or b, or both are found.

Not [-]

[not b]

When entering text preceded by “not” (or a minus sign), all files not containing b are found.

Parentheses [()]

[(a or b) + c]

Using parentheses, you can group text strings. In this example, files that contain c and either a or b are found.

Quotation marks [“”]

[“your search text”]

With quotation marks, you can define sequences of several words. Files are found if they contain the sequence of words that you entered.

IMPORTANT

When you are searching for files whose names 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 638

Resetting the Results List

You can reset all filter settings and filter results.

- In the **MediaBay** toolbar, click **Reset Filter**.

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.

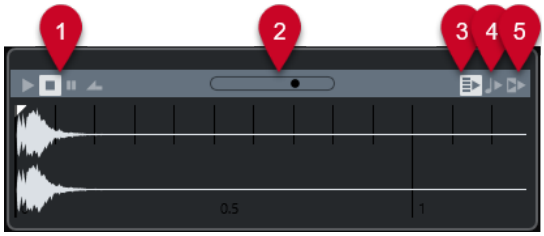
IMPORTANT

The **Previewer** section is not available for video files, project files, and audio track presets.

RELATED LINKS
MediaBay Settings on page 652

Audio Files Previewer

The **Previewer** for audio files allows you to listen to audio files before you use them in your project.



1 **Transport controls**

Start, stop, pause, and cycle the preview.

2 **Preview Level fader**

Specifies the preview level.

3 **Auto Play New Results Selection**

Automatically plays back the selected file.

4 **Align Beats to Project**

Plays back the selected file in sync with the project, starting at the project cursor position. Note that this can apply real-time 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 event.

5 **Wait for Project Play**

Synchronizes the play and stop functions from the **Transport** panel with the play and stop buttons in the **Previewer** section.

To use this option to its full extent, set the left locator to the beginning of a bar, then start playing back the project using the **Transport** panel. The start of the loops that you now select from the **Results** list start together with the project in perfect sync.

RELATED LINKS
Musical Mode on page 499

Using Selection Ranges

You can specify selection ranges to preview a particular section of an audio file and to insert it into the project.

NOTE

Selection ranges cannot be used when the **Align Beats to Project** option is activated in the **Previewer**.

- To select a range, hover the mouse over the upper part of the waveform, so that it turns into a pencil. Click and drag.

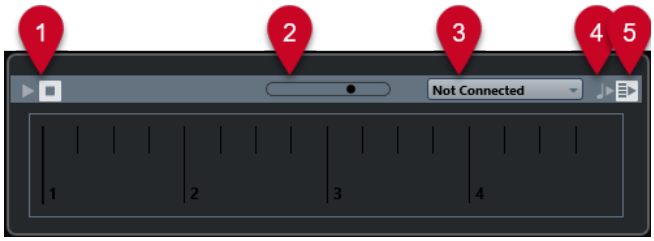
- To adjust the borders of the selection range, drag the handles.

- To deselect the range, drag both handles all the way to the left.

MIDI Files Previewer

The **Previewer** for MIDI files allows you to listen to MIDI files before you use them in your project.

- To preview a MIDI file, load a VST instrument, and select it as an output device from the **Select MIDI Output** pop-up menu.



1 **Transport controls**

Starts and stops the preview.

2 **Preview Level fader**

Specifies the preview level.

3 **Output**

Allows you to select the output device.

4 **Align Beats to Project**

Plays back the selected file in sync with the project, starting at the project cursor position. Note that this can apply real-time time stretching to your MIDI file.

5 **Auto Play New Results Selection**

Automatically plays back the selected file.

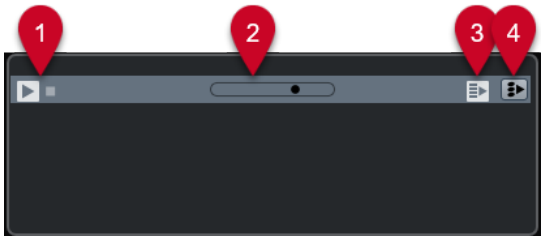
RELATED LINKS
VST Instruments on page 664

MIDI Loops Previewer

The **Previewer** for MIDI loops allows you to listen to MIDI loops before applying them to your project.

NOTE

MIDI loops are always played back in sync with the project.



1 **Transport controls**

Starts and stops the preview.

2 **Preview Level fader**

Specifies the preview level.

3 **Auto Play New Results Selection**

Automatically plays back the selected file.

4 **Link Playback to Chord Track**

Transposes the events of the MIDI loop 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.

RELATED LINKS
Using Follow Chord Track on page 940

VST Presets and Track Presets Previewer for MIDI and Instrument Tracks

The **Previewer** for VST presets and track presets allows you to listen to presets before you use them in your project.

- To preview track presets for MIDI or instrument tracks and VST presets, you must send some MIDI notes to the track preset via MIDI input, using a MIDI file, the **Memo Recorder** mode, or via the computer keyboard.

1 **Transport controls**

Starts and stops the preview.

2 **Previewer Sequence Mode**

Allows you to 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 **MIDI Activity**

Allows you to monitor incoming MIDI messages.

4 **Preview Level fader**

Specifies the preview level.

5 **Keyboard**

You can display the **Keyboard** in keyboard display mode or in piano display mode.

6 **Computer Keyboard Input**

Allows you to use your computer keyboard to preview the presets.

RELATED LINKS
Previewing Presets Using the Memo Recorder Mode on page 636
On-Screen Keyboard on page 261

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 start playing the notes to preview the selected preset.

Previewing Presets Using a MIDI File

PROCEDURE

1. From 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 still displayed on the menu for quick access. To remove an entry from this list, select it from the menu and 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 using a MIDI file to preview presets.

PROCEDURE

1. From 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 instrument preset you selected in the **Results** section.

When you pause 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.

Pattern Banks Previewer

The **Previewer** for pattern banks allows you to listen to pattern banks before you use them in your project.

1 **Transport controls**

Starts and stops the preview.

2 **Preview Level fader**

Specifies 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 a 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**

Automatically plays back the selected file.

5 **Link Playback to Chord Track**

Transposes the events of the pattern bank to play back in context with the chord track. Note that you need a chord track with chord events for this.

NOTE

You can create drum patterns with the MIDI plug-in **Beat Designer**. You can find detailed information on the **Beat Designer** and its functions in the separate document **Plug-in Reference** in the **MIDI Effects** chapter.

Filters Section

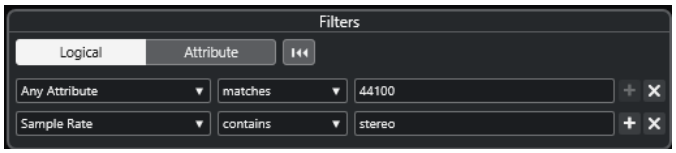
The **MediaBay** allows you to refine your file searches. You have two possibilities: **Logical** or **Attribute** filtering.

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 **Media** rack in the right zone.



contains

The search result must contain the text or the 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 the number specified in the text field to the right.

equals

The search result must correspond exactly to the text or the 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

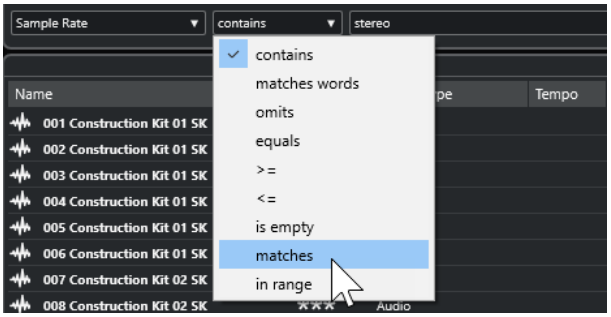
The folder in which you want to search for files is selected.

PROCEDURE

1. In the **Filters** section, activate **Logical**.
2. Click **Search in these Attributes** to open the **Select Filter Attributes** dialog.
3. Select the attributes that you want to use.

   If you select more than one attribute, the search results 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 the number that you want to find into the field on 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 to 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** at the top 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 advanced text searches using boolean operators.

PREREQUISITE

The folder in which you want to search for files is selected.

PROCEDURE

1. In the **Filters** section, activate **Logical**.
2. Select an attribute from the **Search in these Attributes** pop-up menu or leave the **Any Attribute** setting on.
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 631

Media File Attributes

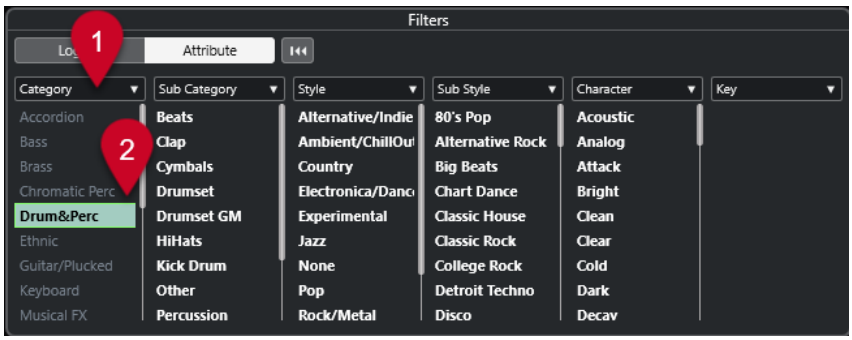
Media file attributes are sets of metadata that provide additional information on the file.

The different types of media files have different attributes. For example, `.wav` audio files have attributes such as name, length, size, sample rate, content set, etc., while `.mp3` files have additional attributes, such as artist or genre.

Attribute Filter

Assigning attribute values facilitates organizing your media files. The **Attribute** filter allows you to view and edit some of the standard file attributes in your media files.

If you click **Attribute**, the **Filters** section displays all the values that have been specified for the displayed attribute categories. Selecting one of these values filters the results to display only the files to which this attribute value is assigned.



1 Attribute column titles

Allow you to select different attribute categories. If the columns are wide enough, the number of files that match these criteria is displayed to the right of the value.

2 Attribute values

Displays the attribute values and indicates how often a certain attribute value has been assigned to your media files.

NOTE

- Some attributes are linked to each other. For example, there are certain sub-category values available for each category value. Changing the value in one of these attribute columns results in different values in the other column.
- Each attribute column displays only the attribute values that are found.

RELATED LINKS
Attribute Inspector on page 642

Applying an Attribute Filter

With the **Attribute** filter, you can quickly find tagged media files with certain attributes.

- To apply an **Attribute** filter, select an attribute value.

  The **Results** list is filtered accordingly. Apply further attribute filters to narrow down the result.
- 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 the attribute column title, and select another attribute.

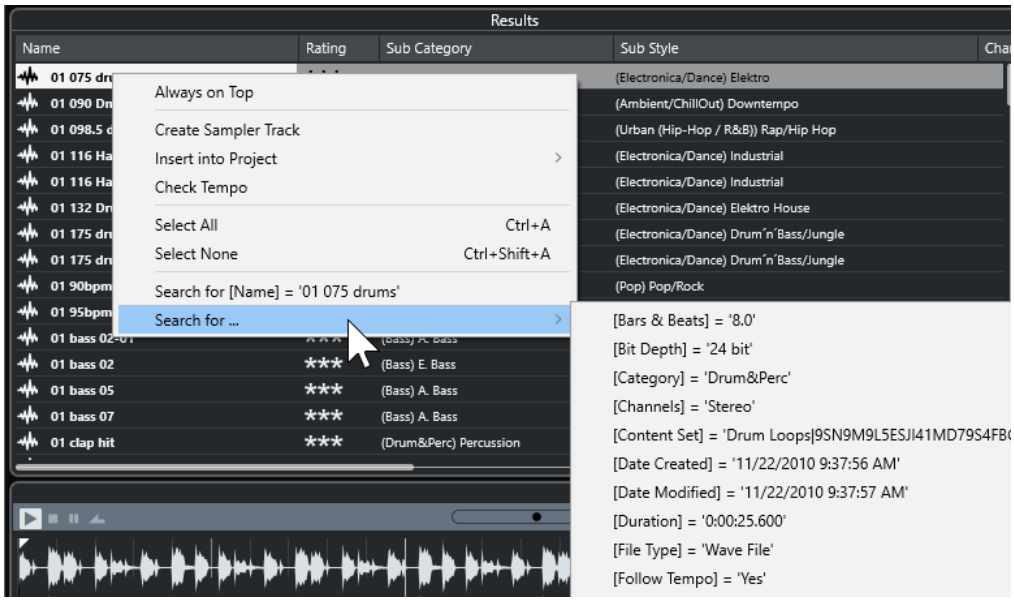
NOTE

Character attributes always form an AND condition.

Performing a Context Menu Search

You can search for files that have the same attribute as the selected file. This allows you to find all the files that have a value in common, for example, if you want to view all the 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 from the **Search for** submenu.



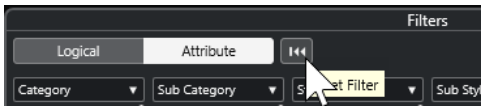
The **Filters** section automatically switches to **Logical** filtering, and the corresponding filter condition line is displayed.

- To reset the filter, click **Go Back**.

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

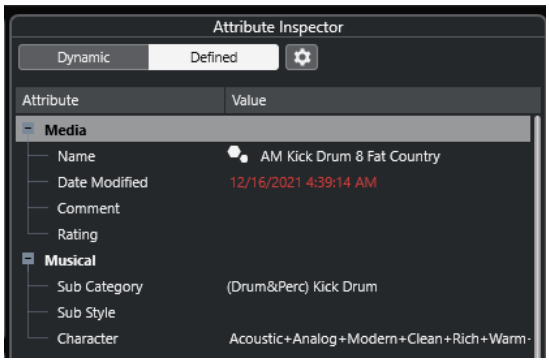
When you have selected one or more files in the **Results** list, the **Attribute Inspector** shows a list of attributes and their values.

NOTE

The **Attribute Inspector** is not available in the **Media** rack 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.), to keep the list manageable and to facilitate finding items.



Dynamic

Displays all available values for the selected files.

Defined

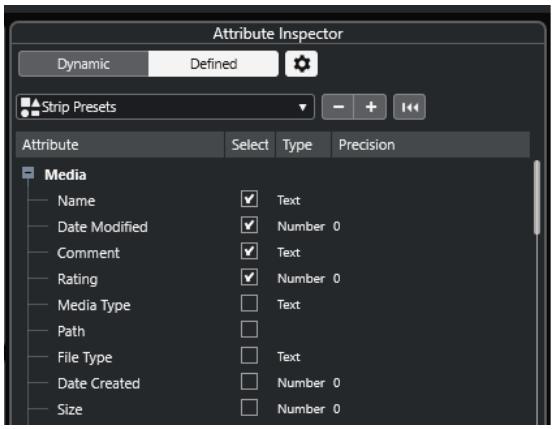
Displays a configured set of attributes for the selected media type, regardless of whether corresponding values are available for the selected files or not.

Configure Defined Attributes

Activates the configuration mode, in which you can set up the attributes that are displayed by the **Attribute Inspector**.

Configuration Mode

When you click **Configure Defined Attributes**, the configuration mode is enabled.



Select Media Types

Allows you to select the media types that are displayed on the **Results** page.

Add User Attribute

Opens the **Add User Attribute** dialog, where you can add 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
Media File Attributes on page 640
Managing Attribute Lists on page 645

Editing Attributes

The search functions, especially the attribute filter, are a powerful media management tool when making extensive use of tagging, that is, 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 to find a particular sound or loop in such a folder structure.

Editing Attributes in the Attribute Inspector

In the **Attribute Inspector**, you can edit the 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. In this case, the file format 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 for which you want to make settings.

   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 of 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. Some of the pop-up menus also have a **more** entry to open a window with further attribute values.
- For the **Rating** attribute, you can click in the **Value** column. Drag left or right to modify the setting.
- For the **Character** attribute (Musical group), the **Edit Character** dialog opens. To define values, click a radio button on the left or on the right side and click **OK**.

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 in the **Results** list. This allows you to assign attributes to a number of loop files, for example.

PREREQUISITE

Allow Editing in Results List is 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, except for the attribute name, which must be unique for every file.

2. Click in the column of the value that you want to change, and make the settings.

RELATED LINKS
MediaBay Settings on page 652

Editing Attributes of Multiple Files Simultaneously

You can edit attributes for multiple files at the same time.

NOTE

If you edit a large number of files simultaneously, processing your edits may take some time.

Editing attributes is executed in the background, so that you can continue with your work. The **Attribute Counter** in the **MediaBay** toolbar displays how many files are still being updated.

RELATED LINKS
MediaBay Toolbar on page 622

Editing Attributes of Write-Protected Files

Media files can be write-protected for a number of reasons: the content may have been 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 of the **Results** list.

IMPORTANT

You can define attribute values for write-protected files in the **MediaBay**. These changes are only saved in the **MediaBay** database file, they are not saved to disk. This means that if you delete the preferences, the changes are lost.

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**.
- If you use other programs than Cubase to change the write-protection status of files, you must rescan the files in the **MediaBay** to reflect these changes.

- To set or remove the write protection attribute for a file, right-click the file in the **Results** list and select **Set Write Protection/Remove Write Protection**.

  This is only possible if the file type allows write operations and if you have the necessary operating 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 of the **Results** list.

  If you rescan the **MediaBay** content and a media file on your hard disk has been changed since the last scan, the pending tags for this file are 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**.

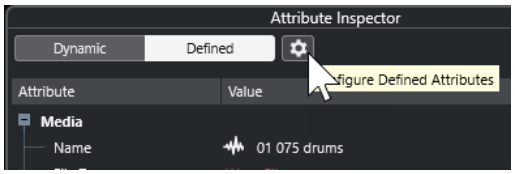
RELATED LINKS
Disabling the Preferences on page 1120
Editing Attributes on page 643

Managing Attribute Lists

In the **Attribute Inspector**, you can define which attributes are displayed in the **Results** list and in the **Attribute Inspector** itself. You can configure individual attribute sets for different media types.

PROCEDURE

1. In the **Attribute Inspector**, click **Defined**.
2. Click **Configure Defined Attributes** to enter the configuration mode.



3. Open the **Select Media Types** 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 that are 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 you made for the **Mixed Media Types** option are applied if you select files of different media types in the **Results** list or in the **Attribute Inspector**.

4. Activate the attributes that you want to be displayed.

   You can edit several attributes simultaneously.

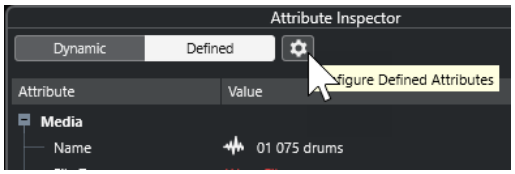
5. Click **Configure Defined Attributes** again to exit the configuration mode.

Defining User Attributes

You can define your own attributes and save these in the **MediaBay** database and in the corresponding media files. Cubase recognizes all user attributes that are included in media files.

PROCEDURE

1. In the **Attribute Inspector**, click **Defined**.
2. Click **Configure Defined Attributes** to enter the configuration mode.



3. Click **+**.
4. In the **Add User Attribute** dialog, specify the **Attribute Type** and the **Display Name**.

   The display name in the attribute list must be unique. 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 displayed in the **Attribute Inspector** and in the **Results** list.

Working with the MediaBay

When you work with many music files, the **MediaBay** helps you to find and organize your content. After scanning your folders, all media files of the supported formats are listed in the **Results** section.

You can set up **Favorites**, that is, folders or directories that contain media files. Usually, files are organized on your computer in a specific way. You might have folders reserved for audio content, folders for special effects, folders for combinations of sounds that make up the ambience noise you need for a certain film take, etc. These can all be set as different **Favorites** in the **MediaBay**, allowing you to limit the files available in the **Results** list according to context.

By using the search and filter options, you can narrow down the results.

You can insert the files into your project by using drag and drop, by double-clicking, or by using the context menu options.

Using Media Files

The **MediaBay** window and the **Media** rack 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 the media files that you were looking for, you can load them 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 **Media** rack in the right zone, click the **Loops & Samples** tile, and click the following tiles until you can select the media files from the **Results** list.
2. Do one of the following:
   - Double-click a media file to create a new instrument or an audio track with the loaded file.
   - Drag the media file to a track in the event display.

RESULT

The media file is inserted on the new track or at the insert position.

RELATED LINKS

Show Media Types Selector on page 629

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 **Media** rack in the right zone, click **Presets** > **Track Presets**, and click the following tiles until you can select the preset from the **Results** list.
2. Do one of the following:
   - Double-click the track preset to create a new track with the loaded preset.
   - Drag the track preset to 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 629

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 **Media** rack in the right zone, click the **VST Instruments** tile, and click the following tiles until you can select the preset from the **Results** list.
2. Do one of the following:
   - Double-click the instrument preset to create a new instrument track with the loaded instrument preset.
   - Drag the instrument preset to the track list to create a new instrument track with the loaded instrument preset.
   - Drag the instrument preset to the event display to create a new instrument track with the loaded instrument preset.
   - Drag the instrument preset to 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

Adding VST Instruments to Projects on page 618
Show Media Types Selector on page 629

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 **Media** rack in the right zone, click **Presets** > **VST FX Presets**, and click the following tiles until you can select the preset from the **Results** list.
2. Do one of the following:
   - Drag the plug-in preset to an audio track or to its **Inserts** section in the **Inspector**.
   - Drag the plug-in preset to an empty area of the track list.

RESULT

If you drag the plug-in preset to an audio track, the first free insert slots are filled with the corresponding plug-in. If there are no more free slots available, a warning is displayed.

If you drag the plug-in preset to an empty area of the track list, a new FX channel track is created, and the first insert slots of this new track are filled.

RELATED LINKS

Show Media Types Selector on page 629
Adding VST Effects to Projects on page 618

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 **Media** rack in the right zone, click **Presets** > **FX Chain Presets**, and click the following tiles until you can select the preset from the **Results** list.
2. In the **Project** window, select an audio track.
3. Drag the preset from the **MediaBay** or **Media** rack, and drop it onto 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 previously loaded inserts are overwritten.

RELATED LINKS

Show Media Types Selector on page 629

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 **Media** rack in the right zone, click **Presets** > **Strip Presets**, and click the following tiles until you can select the preset from the **Results** list.
2. In the **Project** window, select an audio track.
3. Drag the preset from the **MediaBay** or **Media** rack and drop it onto 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 629
Saving/Loading Strip Presets on page 385

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 **Media** rack in the right zone, click **Presets** > **Pattern Banks**, and click the following tiles until you can select the preset from the **Results** list.
2. Do one of the following:

- Double-click the pattern bank to create a new instrument track with the loaded preset.
- Drag the pattern bank and drop it onto an instrument track to apply the pattern bank to the track.
- Drag the pattern bank and drop it onto the track list to create a new instrument track with the loaded pattern bank.

RESULT

Groove Agent is loaded as a track instrument. A drum map is loaded for the instrument track, and an instance of the **Beat Designer** is loaded as an insert effect.

RELATED LINKS

Show Media Types Selector on page 629

Working with Volume Databases

Cubase saves 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 is 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 browse its contents in the **MediaBay** without having to scan the device, you have to create a volume database for the external device.

You can create volume databases for your computer drives or for external storage media. They contain the same information about the media files 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 Volume Databases

If you have modified the data on your external volume on a different system, you must rescan the **MediaBay**.

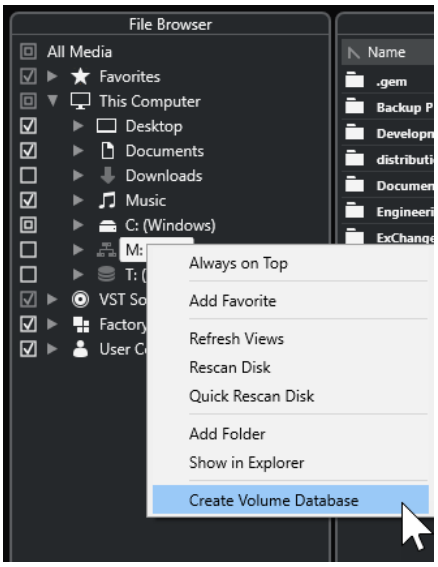
RELATED LINKS

Refresh Views on page 626

Creating Volume Databases

PROCEDURE

- In the **File Browser** section, right-click the external storage medium, drive, or partition of your computer system, and select **Create Volume Database**.



IMPORTANT

Select the topmost directory level for this. You cannot create a database file for a lower-level folder.

NOTE

If you create a volume database on a network drive, multiple users can access it. This can lead to write conflicts, as only one user at a time can write to the database.

RESULT

The file information for this drive is written into a new database file. Volume databases are indicated by the symbol to the left of the drive name.

NOTE

If the drive contains a large amount of data, this process may take some time.

Volume databases are automatically mounted when Cubase is launched. They are shown in the **File Browser** section, and their data can be viewed and edited in the **Results** list.

RELATED LINKS

Locked Volume Databases on Network Drives on page 651

Locked Volume Databases on Network Drives

You can unlock volume databases on network drives. This can be necessary, if the system of another user who also used the volume database on the network drive crashed or was not properly disconnected. In this case, Cubase creates a file in a hidden folder, which indicates that the database is still in use.

If this happens, you get a warning message when you launch the program. It shows the name of the user or the system.

Do one of the following:

- Ask the other user to restart Cubase, so that the lock is automatically released.

- If you cannot reach the other user and you do not need to access the database, click **Ignore Database**.
- If you cannot reach the other user and you want to use the database, click **Force unlock** to remove the lock.

Removing Volume Databases

If you have worked on another computer using an external hard disk and return to your own computer and connect the external device as part of your system setup, you no longer need a separate volume database. Any data on this drive can be included in the local database file again, removing the extra database file.

PROCEDURE

- In the **File Browser** 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 some time.

Mounting and Unmounting Volume Databases

Volume databases that are made available while Cubase is running must be mounted manually.

- To manually mount a volume database, 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

- To open a pane with settings for the **MediaBay**, click **MediaBay Settings**.

The following options are available in the **File Browser** section:

Hide Folders That Are Not Scanned
Hides all folders that are not scanned for files. This keeps the tree view in the **File Browser** less cluttered.

Show Only Selected Folder
Shows only the selected folder and its subfolders.

Scan Folders Only When MediaBay Is Open
Scans folders 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.

The following options are available in the **Results** section:

Allow Editing in Results List

Allows you to 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

Shows file name extensions in the **Results** list.

Scan Unknown File Types

When scanning for media files, the **MediaBay** ignores files with unknown file extensions. If this option is activated, the **MediaBay** tries to open and scan any file in the search location and ignores files that cannot be recognized.

Automation

In essence, automation refers to recording values for a particular **MixConsole** or effect parameter. When you create your final mix, Cubase can adjust this particular parameter control.

Recording your Actions

If the settings in your current project are crucial, you may not want to experiment with automation until you know more about how it all fits together. If so, you can create a new project for the following example. The project does not have to contain any audio events, just a few audio tracks.

PROCEDURE

1. On the **Project** window toolbar, click **W** to activate write for all tracks.
2. Start playback and adjust some volume faders and/or other parameter settings in the **MixConsole**.

   Stop playback when you are done, and return to the position where you started playback.
3. Click **W** to deactivate the write mode and click **R** to activate read for all tracks.
4. Start playback, and watch the **MixConsole**.

   All your actions that were performed during the previous playback are reproduced exactly.
5. Select **Project** > **Show All Used Automation** to view all recorded automation events.
6. To redo anything that was recorded, click **W** again and start playback from the same position.

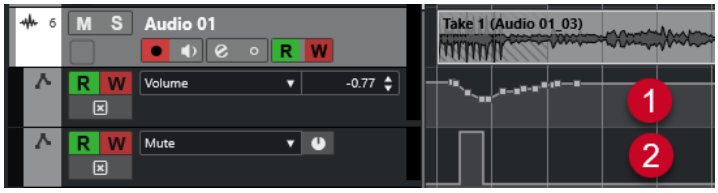
   NOTE

   You can have **W** and **R** activated simultaneously, if you want to watch and listen to your recorded **MixConsole** actions while you are recording fader movements for another channel, etc.

Automation Curves

Within a Cubase project, the changes affecting parameter values over time are represented by 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 **Step curves**

Step 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 indicated by a dotted horizontal line, the static value line, in the event display. This line represents the current parameter setting.

If you manually add any automation events or use write automation for the corresponding parameter and then disable the reading of automation data, the automation curve is grayed out 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 identical to 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.

You can also find global read and write indicator buttons **Activate/Deactivate Read/Write for All Tracks** on the **Project** window toolbar and on the **MixConsole** toolbar. These buttons light up as soon as an **R** or **W** button on any channel/track within your project is enabled. Furthermore, they can be clicked to activate or deactivate **R**/**W** of all tracks simultaneously.

Writing Automation Data

You can create automation curves manually or automatically.

- Manual writing makes it easy to quickly modify 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** by a moved fader, for example, and in the corresponding automation track curve.

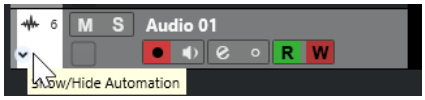
RELATED LINKS
Manual Writing of Automation Data on page 656

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 on the effect control panel.

   The value settings are recorded and displayed on the automation tracks as a curve. When automation data is being written, the color of the automation track changes, and the delta indicator in the automation track indicates the deviation of the new parameter 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

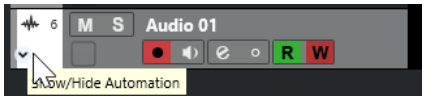
All actions that you record are reproduced exactly. When you drag a plug-in to a different insert slot on the same channel, any existing automation data moves with the plug-in. When you drag it to an insert slot on a different channel, any existing automation data is not transferred to the new channel.

Manual Writing of Automation Data

You can manually add automation events 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 automation events.

   When you release the mouse button, the number of automation events is reduced.
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 in case you are not satisfied 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 **Object Selection** tool and the **Line** tool to draw automation events. If you click on the automation track with any of these tools, **R** is activated automatically.

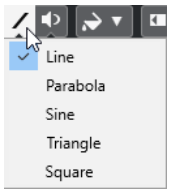
- **Object Selection**

  If you click on an automation track with the **Object Selection** tool, an automation event is added. If you hold down **Alt/Opt**, you can draw several automation events.

  NOTE

  Events that are introduced between existing events and 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

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

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/Square

If you click and drag on the automation track, with the **Line** tool in **Sine**, **Triangle**, or **Square** mode and with the **Snap Type** set to **Grid**, the period of the curve, that is, 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 in the same manner as 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 existing 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
Project Window Toolbar on page 38
Automation Event Editor on page 659

Creating Smooth Transitions Between Automation Events (Bézier Automation Curves)

Cubase supports bézier automation curves that allow you to create smooth transitions between automation events. This way, you can edit linear ramp curves with more precision, flexibility, and intuition.

PREREQUISITE

The **Object Selection** tool is active.

PROCEDURE

1. Move the mouse pointer on the linear ramp curve segment that you want to edit.

   A handle is shown on the curve segment.

   NOTE

   If the automation events are next to each other on an almost horizontal or vertical line, or if they are too close to each other, the handle is not available.

2. Click and drag, with the mouse button pressed to modify the shape of the curve segment.

3. As soon as you are satisfied with the result, release the mouse button.

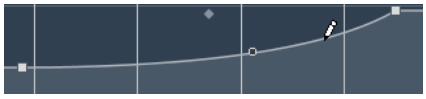
RESULT

A smooth transition curve is created, reflecting your edits.

If you are not satisfied with the result and want to start over again from the original linear curve segment, double-click the handle.

AFTER COMPLETING THIS TASK

For even more precise editing, add new automation events to your bézier curve segment.



This creates new segments that you can smoothen.

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 multiple events, select a range with the **Range 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 659

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.

NOTE

All editing in the automation event editor only affects the automation events that are part of the selection.

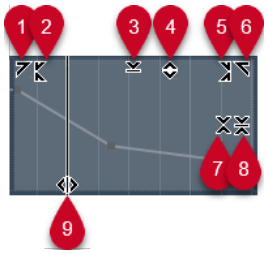
To open the automation event editor, do one of the following:

- Activate the **Object Selection** tool, and drag a selection rectangle on a ramp type automation track.
- Activate the **Range Selection** tool, and select a range on a ramp type automation track.

  NOTE

  If you work with the **Range Selection** tool, the smart control for **Stretch** is not available.

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/Opt**-click in the upper left corner of the editor, you can compress or expand 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/Opt**-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/Opt**-click in the center of the right border 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 center of the 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 simultaneously, select the automation events on the corresponding automation tracks with the **Object Selection** tool or the **Range Selection** tool, and hold down **Ctrl/Cmd** while using the smart controls.

NOTE

If you select automation events with the **Range Selection** tool, additional automation events are automatically created at the start and at the end of the selection. This ensures that the entire selection is edited.

RELATED LINKS
Automation Curves on page 654

Quick Vertical Scaling of Automation Events

You can vertically scale the curve segment between two automation events without selecting the events first.

PROCEDURE

1. Move the mouse pointer to the upper border of the automation track, above the linear ramp curve segment that you want to scale.

   A handle is shown.

2. Click and drag up or down, with the mouse button pressed.
3. When you are satisfied with the result, release the mouse button.

RESULT
The curve segment between the two automation events is scaled.

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 of the 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 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/Opt**, 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 659

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**.
- 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.

Automation Tracks

Most of the tracks in your project have automation tracks, one for each automated parameter.

To show automation tracks, 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.
- To open the corresponding automation track on writing automation parameters, activate **Show Automation Track in Project on Writing Parameter** in the **Preferences** dialog (**Editing** page).

Removing Automation Tracks

- To remove an automation track with all automation events, click the parameter name, and select **Remove Parameter** from the pop-up menu.
- 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.

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 content depends on the track type.
2. Do one of the following:
   - Select the parameter.
   - Select **More** to open the **Add Parameter** dialog that lists all parameters that can be automated, and select the parameter.

RESULT

The parameter replaces the current parameter in the automation track.

NOTE

Replacing automation parameters is non-destructive. If the automation track contains any automation data for the parameter that you replaced, this data is still available, although it is not visible. By clicking on the name of the automation parameter in the track list, you can switch back to the replaced parameter. On the pop-up menu, an asterisk (*) after the parameter name indicates hidden automation tracks.

Muting Automation Tracks

By muting an automation track, you turn off automation for a single parameter.

- To mute individual automation tracks, click **Mute Automation** in the track list.

VST Instruments

VST instruments are software synthesizers or other sound sources that are included with 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 for this track.

NOTE

Some VST instruments are included with Cubase. These are described in the separate document **Plug-in Reference**.

RELATED LINKS

Instrument Tracks and Channels on page 112

Adding VST Instruments

PROCEDURE

1. On the **Studio** menu, select **VST Instruments**.
2. Right-click on an empty area of the **VST Instruments** window.
3. From the context menu, select **Add Rack Instrument**.
4. From the instrument selector, select an instrument.
5. Click **Create**.

RESULT

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**.

VST Instrument Control Panel

The VST instrument control panel allows you to set up the parameters of the selected instrument. The contents, the design, and the layout of the control panel depend on the selected instrument.

The following controls are available:

1 Activate Instrument

Activates/Deactivates the instrument.

2 Read Automation/Write Automation

Allows you to read/write automation for the instrument parameter settings.

3 Switch between A/B Settings

Switches to setting B when setting A is active, and to setting A when setting B is active.

4 Apply current settings to A and B

Copies the instrument parameters of instrument setting A to instrument setting B, and vice versa.

5 Activate/Deactivate Side-Chaining

Activates the side-chain functionality for VST 3 instruments that support side-chaining.

6 Set up Side-Chain Routing

Allows you to set up the side-chain routing for the selected plug-in.

7 Event Received Indicator

Lights up on receiving note-on and controller messages.

8 Preset browser

Opens the preset browser, where you can select another preset.

9 Load previous Program/Load next Program

Loads the previous/next program in the preset browser.

10 Preset Management

Opens a pop-up menu that allows you to save, rename, or remove a preset.

11 Add VST Plug-in Picture to Media Rack

Adds a picture of the VST plug-in to the **Media** rack. This is only available for plug-ins of other vendors.

12 VST Instrument context menu

Opens a context menu with specific functions and settings.

13 Show/Hide VST Quick Controls

Shows/hides the quick controls.

14 Focus Quick Controls Lock State: Locked/Unlocked

Allows you to lock the focus of the quick control to the plug-in window.

15 Focus Quick Controls Indicator

If this indicator is lit, the plug-in window has the quick control focus.

RELATED LINKS

Adding Pictures of VST Instruments to the Media Rack on page 620
VST Instrument Context Menu on page 671
Hiding/Showing VST Instrument Control Panels on page 666
Side-Chaining for VST Instruments on page 679
Setting up Focus Quick Controls in the MIDI Remote Mapping Assistant on page 719
Focus Quick Controls on page 719

Hiding/Showing VST Instrument Control Panels

When you add a VST instrument, the respective plug-in control panel opens automatically. You can hide the control panels from view. This is useful to get a better overview if you added a number of plug-ins to your project whose control panels clutter up the screen.

PROCEDURE

- Select **Window** > **Hide Plug-in Windows**.

  NOTE

  This also hides VST effect control panels.

RESULT

The plug-in windows are hidden and sent to the back of the application. To show them again, select **Show Plug-in Windows**.

RELATED LINKS

VST Instrument Control Panel on page 665

Closing All Control Panels

When you add a VST instrument, the respective plug-in control panel opens automatically. You can close all control panels at once.

PROCEDURE

- Select **Window** > **Close All Plug-in Windows**.

  NOTE

  This also closes VST effect control panels.

RESULT

The control panels are closed.

RELATED LINKS

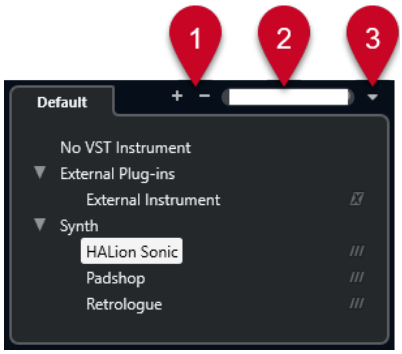
VST Instrument Control Panel on page 665

VST Instrument Selector

The VST instrument selector allows you to select VST instruments from the active collection.

- To open the VST instrument selector, click a slot in the **VST Instruments** window.

The following controls are available:



1 **Expand Tree/Collapse Tree**

Expands/Collapses the tree.

2 **Search VST Instrument**

Allows you to search for VST instruments by typing in the name or parts of the name or the category.

3 **Plug-in Collections and Options**

Allows you to select a collection.

If you select the **Default** collection, the options **Sort By Category** and **Sort by Vendor** become available. They allow you to sort the default collection.

Creating Instrument Tracks

You can create instrument tracks that contain dedicated VST instruments.

PROCEDURE

1. In the global track controls area of the track list, click **Add Track**.
2. Click **Instrument**.
3. Open the **Instrument** pop-up menu, and select a VST instrument.
4. Click **Add Track**.

RESULT

The selected VST instrument is loaded for the instrument track. In the **MixConsole**, an instrument channel is added.

VSTi Rack in the Right Zone

The **VSTi** rack in the right zone of the **Project** 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 up to 8 quick controls for each added instrument.

- To open the **VSTi** rack in the right zone, click **Show/Hide Right Zone** on the **Project** window toolbar, and, at the top of the right zone, click the **VSTi** tab.

NOTE

The **VSTi** rack in the right zone is just another representation of the **VST Instruments** window. All features are identical.

RELATED LINKS

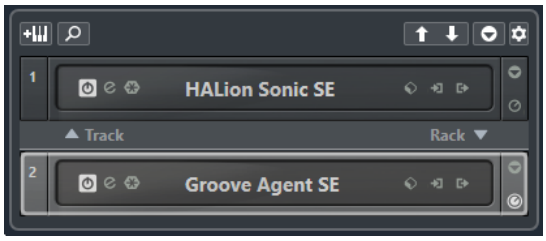
Showing/Hiding Zones on page 36
Project Window Toolbar on page 38

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 up to 8 quick controls for each added instrument.

To open the **VST Instruments** window, select **Studio** > **VST Instruments**.



RELATED LINKS
Instrument Tracks and Channels on page 112

VST Instruments Window Toolbar

The **VST Instruments** window toolbar contains controls that allow you to add and set up VST instruments and **VST Quick Controls**.

Add Track Instrument

Opens the **Add Track** dialog that allows you to select an instrument and to add an instrument track that is associated with this instrument.

Find Instruments

Opens a selector that allows you to find a loaded instrument.

Set Remote-Control Focus for VST Quick Controls to Previous Instrument

Allows you to set the remote control focus to the previous instrument.

Set Remote-Control Focus for VST Quick Controls to Next Instrument

Allows you to set the remote control focus to the next instrument.

Show/Hide all VST Quick Controls

Shows/Hides the default quick controls for all loaded instruments.

Settings

Opens the **Settings** pop-up menu, where you can activate/deactivate the following modes:

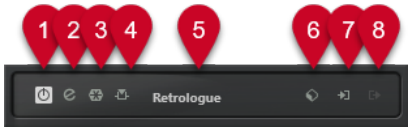
- **Show VST Quick Controls for One Slot Only** shows the **VST Quick Controls** exclusively for the selected instrument.

- **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 Controls** 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 for 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/Deactivate Side-Chaining**

Activates/Deactivates side-chaining.

5 **Instrument selector**

Allows you to select another instrument. Double-click to rename the instrument. The name is shown in the **Output Routing** pop-up menu for MIDI tracks. This is useful for working 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.

RELATED LINKS

Freezing Instruments on page 674

VST Instrument Context Menu

The VST instrument control panel context menu and the **Functions** menu on the VST instrument control panel display functions and settings that are specific to the instrument.

Do one of the following:

- Right-click an empty area of the VST instrument control panel.
- Open the **Functions** pop-up menu on the VST instrument control panel.

The following functions are available:

Copy <VST instrument name> Setting/Paste <VST instrument name> Setting
Allows you to copy the instrument settings and paste them to another instrument.

Load Preset/Save Preset
Allows you to load/to save a preset.

Default Preset
Allows you to define and save a default preset.

Switch to A Setting/Switch to B Setting
Switches to setting B when setting A is active, and to setting A when setting B is active.

Apply Current Settings to A/Apply Current Settings to B
Copies the instrument parameters of instrument setting A to instrument setting B, and vice versa.

Activate Outputs
Allows you to activate one or more outputs for the instrument.

Activate/Deactivate Side-Chaining
Activates/Deactivates side-chaining 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**.

Switch to Generic Editor
Opens the generic editor for the instrument.

Allow Window to be Resized
Allows for dynamic resizing of third-party plug-in windows in Cubase. This is useful if you activated **Enable HiDPI** (Windows only) in the **Preferences** dialog (**General** page) and your plug-in does not support dpi settings.

NOTE

Allow Window to be Resized is a plug-in-specific setting. Activate/deactivate it for every plug-in that requires it.

RELATED LINKS
General on page 1138

Presets for Instruments

You can load and save presets for instruments. Presets contain all the settings that are required for the sound that you want.

The following presets for instruments are available:

- **VST Presets**

  VST presets include the parameter settings of a VST instrument.

  Presets are available from the **VST Instruments** window, from the instrument control panels, and from the **Programs** field in the **Inspector**.
- **Track Presets**

  Track presets include the instrument track settings and the settings for the corresponding VST instrument.

  Presets 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 control panel or from the **Inspector**.

PROCEDURE

1. Do one of the following:
   - Select the track that contains the VST instrument. In the **Routing** section of the **Inspector**, click **Program Selector**.
   - 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.

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.

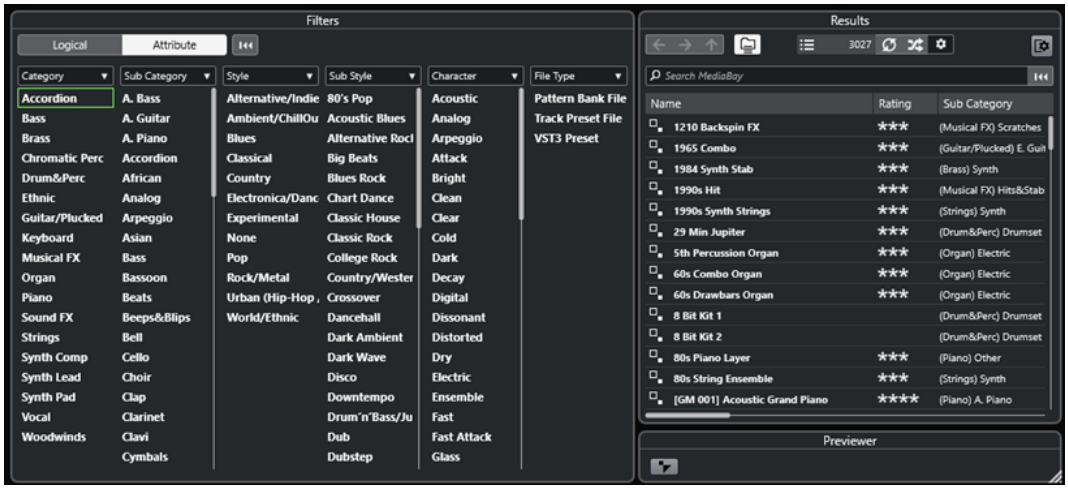
RESULT

The track preset is applied. To return to the previously loaded preset, open the preset browser again, and click **Revert to Last Setting**.

Instrument Presets Results Browser

The **Results** browser for instrument track presets allows you to preview VST presets and to 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 multitimbral instruments, this includes the settings for all sound slots as well as the global settings.

Programs

Programs contain only the settings for one program. For multitimbral instruments, this includes only the settings for one sound slot.

Saving Track Presets

You can save your settings on instrument tracks as track presets for further use.

PROCEDURE

1. 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 with the loaded VST instrument.
2. Press one or more keys on your MIDI keyboard or use the **On-Screen Keyboard**.

   The corresponding sounds are triggered on your VST instrument.
3. Select **Studio** > **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 it is that you run out of processor power during playback.

If the **Processing Overload** indicator in the **Audio Performance** panel lights up or you get crackling sounds, you have the following options:

- Activate **Freeze Channel**.

  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 674
Suspend VST 3 plug-in processing when no audio signals are received on page 1151

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 real time. At this point, you can freeze instruments.

PROCEDURE

1. Do one of the following:
   - Select **Studio** > **VST Instruments**.
   - Select the instrument track, and open the top **Inspector** section.
2. Click **Freeze Channel**.
3. In the **Freeze Channel Options** dialog, make your changes.
4. Click **OK**.

RESULT

- The output of the instrument is rendered to an audio file. On playback you hear the same sound as before freezing.
- Less CPU load is used.
- The **Freeze Channel** button lights up.
- The track controls are grayed out.
- The MIDI parts are locked.
- You can still adjust the level and panning, make EQ settings, and adjust the effect sends.

NOTE

The audio file is saved in the **Freeze** folder that can be found in the following location:

- Windows: within the **Project** folder
- macOS: **User/Documents**

AFTER COMPLETING THIS TASK

To unfreeze a frozen track, click **Freeze Channel** again.

RELATED LINKS

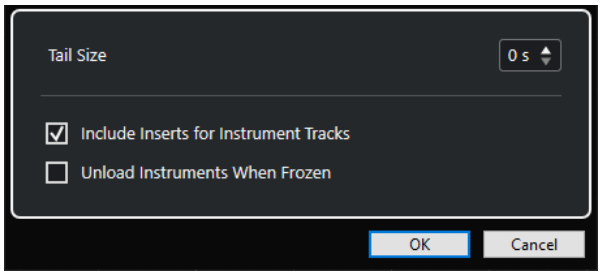
Freezing Multiple Tracks on page 166
Freeze Channel Options Dialog for Instruments on page 675
Unfreeze Channel Options Dialog for Instruments on page 676

Freeze Channel Options Dialog for Instruments

The **Freeze Channel Options** allows you to specify exactly what is supposed to happen when you freeze an instrument.

To open the **Freeze Channel Options** dialog, select the instrument track, and do one of the following:

- In the top **Inspector** section, click **Freeze Channel**.
- Select **Edit** > **Freeze/Unfreeze** > **Selected Tracks**.
- Right-click the selected track, and from the context menu, select **Freeze/Unfreeze Selected Tracks**.



Tail Size

Allows you to set a tail size time to let sounds complete their normal release cycle.

Include Inserts for Instrument Tracks

Activate this option if you want to include insert effects on this channel when freezing the instrument.

NOTE

You can still adjust level, pan, sends, and EQ.

Deactivate this option if you still want to be able to edit insert effects on this channel.

Unload Instruments When Frozen

Activate this option to unload the instrument after freezing. This makes the RAM available again.

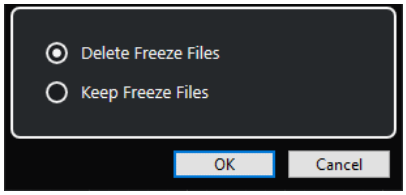
RELATED LINKS
Freezing Multiple Tracks on page 166
Freezing Instruments on page 674
Unfreeze Channel Options Dialog for Instruments on page 676

Unfreeze Channel Options Dialog for Instruments

The **Unfreeze Channel Options** allows you to specify exactly what should happen if you unfreeze an instrument track.

To open the **Unfreeze Channel Options** dialog, select a frozen instrument track, and do one of the following:

- In the top **Inspector** section, click **Freeze Channel**.
- Select **Edit** > **Freeze/Unfreeze** > **Selected Tracks**.
- Right-click the selected track, and from the context menu, select **Freeze/Unfreeze Selected Tracks**.



Delete Freeze Files

Deletes the freeze files.

Keep Freeze Files

Keeps the freeze files in the **Freeze** folder that can be found in the following location:

- Windows: within the **Project** folder
- macOS: **User/Documents**

RELATED LINKS
Freeze Channel Options Dialog for Instruments on page 675
Freezing Instruments on page 674
Freezing Multiple Tracks on page 166

Latency

Latency stands for the time it takes for the instrument to produce a sound after you press a key on your MIDI controller. It can be an issue when using VST instruments in real time. Latency depends on your audio hardware and its ASIO driver.

In the **Studio Setup** dialog (**Audio System** page), the input and output latency values should ideally be a few milliseconds.

If the latency is too high to allow comfortable real time 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 17

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 prevent additional latency when you play a VST instrument in real time 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 well 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**.

If you activate **Constrain Delay Compensation** for instrument channels, record-enabled audio track channels, group channels, and output channels, the following happens:

- For VST 3 plug-ins that feature a **Live** button, and for third-party VST 3 plug-ins that feature a low latency mode, activating **Constrain Delay Compensation** activates the **Live** button or the low latency mode for that particular plug-in. For details about the included plug-ins that feature a **Live** button, see the separate document **Plug-in Reference**.
- For VST plug-ins that have no low latency mode, activating **Constrain Delay Compensation** turns off that plug-in.

NOTE

VST plug-ins that are activated for FX channels are disregarded.

After recording or using a VST instrument, deactivate **Constrain Delay Compensation** again, in order to restore full delay compensation.

RELATED LINKS
Project Window Toolbar on page 38

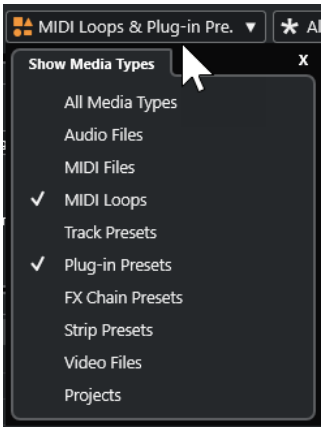
Import and Export Options

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: On the toolbar, 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 that this part only contains the MIDI data (notes, controllers) saved in the MIDI loop, but no **Inspector** settings or instrument parameters.

RELATED LINKS

Presets for Instruments on page 672
Filtering According to Media Type on page 629

Exporting MIDI Loops

You can export MIDI loops to save a MIDI part, including 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. MIDI loops have the file extension `.midiloop`.

PROCEDURE

1. Select an instrument part.

2. Select **File** > **Export** > **MIDI Loop**.
3. In the **Save MIDI Loop** dialog, 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**.

RESULT

MIDI loop files are saved in the following folder:

Windows: `\Users\<user name>\AppData\Roaming\Steinberg\MIDI Loops`

macOS: `/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 Files

You can export instrument tracks as standard MIDI files.

PROCEDURE

1. Select an instrument track.
2. Select **File** > **Export** > **MIDI File**.
3. In the **Export MIDI File** dialog, select a location, and enter a name for the MIDI file.
4. Click **Save**.
5. In the **Export Options** dialog, make your changes.

   If you activate **Export Inspector Volume/Pan**, volume and pan information of the VST instrument is converted and written into the MIDI file as controller data.
6. Click **OK**.

RESULT

The instrument track is exported as a standard MIDI file. As there is no MIDI patch information in an instrument track, this information is missing in the resulting MIDI file.

RELATED LINKS

Exporting MIDI Tracks as Standard MIDI Files on page 158

Side-Chaining for VST Instruments

You can send audio into VST 3 instruments that support side-chaining. 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 side-chaining 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 listen to the audio played through the instrument, 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 680

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. On the Retrologue control panel, click **Activate/Deactivate Side-Chaining**.
2. On the control panel, click **Set up Side-Chain Routing**.
3. Click **Add Side-Chain Source**, and select the audio track from the selector.
4. In the **Project** window, select the audio track.
5. In the **Inspector** for the audio track, open the **Routing** section.
6. Open the **Output Routing** pop-up menu and select Retrologue as a side-chain input.
7. On the Retrologue panel in the **Oscillator Mix** section, adjust the **Input Level** control.
8. Optional: Deactivate oscillators **OSC 1**, **OSC 2**, and **OSC 3**.
9. 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. 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 document **Retrologue**.

Installing and Managing 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.

NOTE

Cubase supports 64-bit plug-ins only.

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.

VST effect or VST instrument plug-ins 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 plug-ins are shown on the VST effect or VST instrument selectors, respectively.

Cubase comes with a number of effect plug-ins included. These effects and their parameters are described in the separate document **Plug-in Reference**.

Plug-ins and Collections

The **VST Plug-in Manager** shows the VST effects and VST instruments that are installed on your computer.

In Cubase, plug-ins are arranged in collections. Only one collection can be active at a time. The plug-ins contained in the active collection are displayed in the selectors, in various locations of the program.

When you launch Cubase, all plug-ins that are found are automatically placed in the **Default** collection. This is the collection of plug-ins that is active by default.

The **Default** collection is created each time you start Cubase or initiate a rescan.

You can add your own VST effect or VST instrument collections. This is useful if you only want to see specific plug-ins that are used in a specific project, for example. When you activate this collection, all VST effects and VST instruments of this collection are shown in the selectors for VST effects or VST instruments.

NOTE

If an installed VST effect or a VST instrument cannot be loaded by Cubase, it is not shown on the **VST Effects** tab or the **VST Instruments** tab, and it is grayed out in any collection. In this case, verify that the plug-in is not copy-protected.

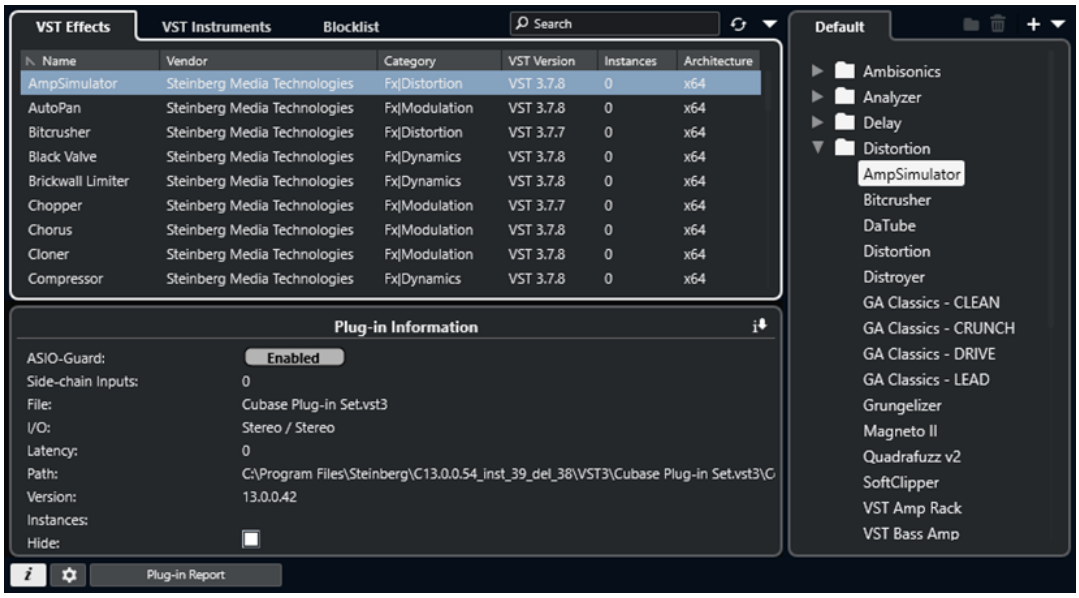
RELATED LINKS

VST Plug-in Manager Window on page 683
Adding New Plug-in Collections on page 685

VST Plug-in Manager Window

You can manage VST effects and VST instruments in the **VST Plug-in Manager** window.

- To open the **VST Plug-in Manager** window, select **Studio** > **VST Plug-in Manager**.



The **VST Plug-in Manager** is divided into the following sections:

VST Effects

Lists all VST effects that are loaded in Cubase. To sort the list by a specific attribute, click the corresponding column header.

VST Instruments

Lists all VST instruments that are loaded in Cubase. To sort the list by a specific attribute, click the corresponding column header.

Blocklist

Lists all VST effects and VST instruments that are installed on your system but not loaded in Cubase, because they might lead to stability problems or even cause the program to crash.

Toolbar

Shows tools and shortcuts for functions in the **VST Plug-in Manager**.

Active collection

Shows the active collection. The plug-ins of the active collection are shown in the selectors for VST effects and VST instruments.

Show VST Plug-in Information

Shows information about the selected plug-in.

VST 2 Plug-in Path Settings

Shows the path of the selected VST 2 plug-in.

Plug-in Report

Opens the File Explorer/macOS Finder that allows you to save a text file that contains information about your system as well as plug-in information. This is useful for troubleshooting, for example.

RELATED LINKS
Plug-ins and Collections on page 682
Audio System Page on page 18
VST Plug-in Manager Toolbar on page 684
VST 2 Plug-in Path Settings on page 685
Hiding Plug-ins on page 686
Reactivating Plug-ins from the Blocklist on page 687

VST Plug-in Manager Toolbar

Shows tools and shortcuts for functions in the **VST Plug-in Manager**.

- To open the **VST Plug-in Manager** window, select **Studio** > **VST Plug-in Manager**.

Search field

Allows you to search for specific plug-ins on the **VST Effects** tab or on the **VST Instruments** tab by typing in their name.

Rescan All

Rescans the plug-in list.

Display Options

Allows you to choose which plug-ins are shown:

- **Show All Plug-ins** displays all loaded plug-ins.
- **Hide Plug-ins That Are in Active Collection** hides all plug-ins that are part of the active collection.
- **Show Plug-ins That Support 64-Bit Float Processing** shows all VST 3 plug-ins that support 64-bit float processing.

New Folder

Creates a new folder in the current collection.

Delete

Deletes the selected item from the current collection.

Add Collection

Creates a new collection.

- **Empty** creates a new, empty collection.
- **Add All Plug-ins** creates a new collection that contains all VST effects or VST instruments, respectively.
- **Copy Collection** creates a new collection that contains the current collection.

Plug-in Collections and Options

- **Default** activates the default collection.
- **New Collection** allows you to create a new collection.
- **Remove Unavailable Plug-ins from All Collections** removes all plug-ins that are not available from all user-created collections.
- **Sort By Category** sorts the collection by category.

NOTE

This option is available for the **Default** collection only.

- **Sort By Vendor** sorts the collection by vendor.

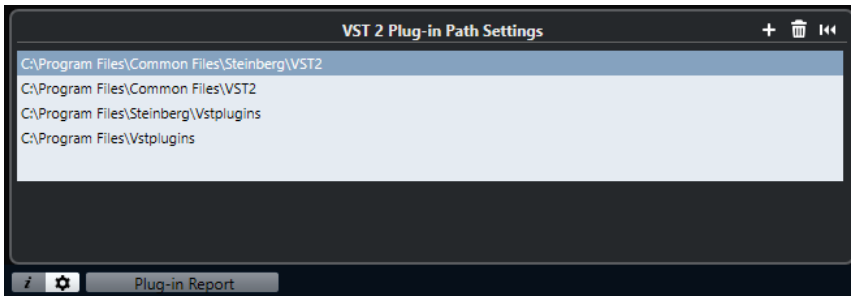
NOTE

This option is available for the **Default** collection only.

VST 2 Plug-in Path Settings

Displays information about the selected VST 2 plug-in path.

- To open the **VST 2 Plug-in Path Settings**, select **Studio** > **VST Plug-in Manager**, and click **VST 2 Plug-in Path Settings**.



VST 2 Plug-in path list

Shows all VST 2 plug-in paths.

Add Path

Allows you to add a new VST 2 plug-in path.

Delete Path

Deletes the selected VST 2 plug-in path.

Reset

Resets the list to default.

Adding New Plug-in Collections

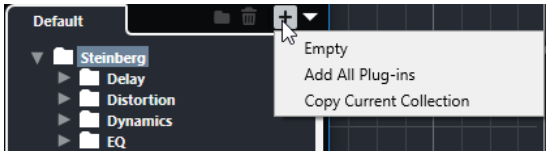
You can add new collections of VST effects or VST instruments.

PREREQUISITE

A number of effect plug-ins is installed on your computer. These plug-ins are listed in the **VST Plug-in Manager** on the **VST Effects** tab and the **VST Instruments** tab.

PROCEDURE

1. In the **VST Plug-in Manager** toolbar, click **Add Collection**, and select an option.



2. In the **Add Collection** dialog, enter a name for the new collection, and click **OK**.

3. Optional: Click **New Folder**.

   You can then move your plug-ins into these folders to organize them by categories, for example.

4. Enter a name for the new folder, and click **OK**.
5. From the **VST Effects** tab or the **VST Instruments** tab, select the plug-ins that you want to add to the collection, and drag them into the new collection.

   If you created folders, you can drag the plug-ins into them.

RESULT

The new collection is saved. If you select it, its plug-ins are shown in the plug-in selectors.

AFTER COMPLETING THIS TASK

To remove a plug-in from a collection, select it, and click **Remove**.

RELATED LINKS

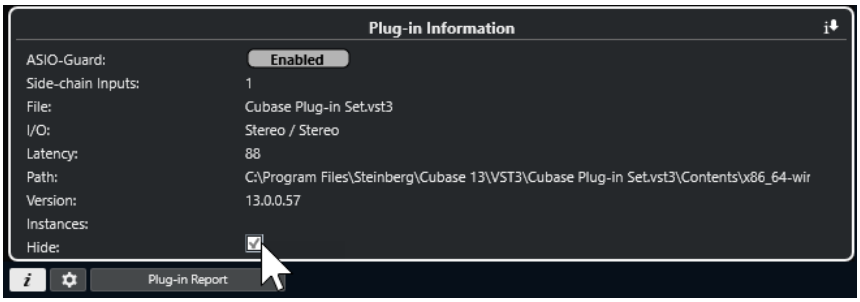
Plug-ins and Collections on page 682
VST Plug-in Manager Window on page 683

Hiding Plug-ins

You can hide plug-ins from all collections. This is useful if you have installed plug-ins on your computer that you do not want to use in Cubase.

PROCEDURE

1. Select **Studio** > **VST Plug-in Manager**.
2. On the **VST Effects** tab or on the **VST Instruments** tab, select the plug-ins that you want to hide from view.
3. Click **Show VST Plug-in Information** to show information about the selected plug-in.
4. Activate **Hide**.



RESULT

The selected plug-in is hidden from view.

RELATED LINKS

ASIO-Guard on page 1125

Reactivating Plug-ins from the Blocklist

You can reactivate 64-bit plug-ins that are on the blocklist.

PROCEDURE

1. On the **Blocklist** tab, select the plug-ins that you want to reactivate.

   NOTE

   You cannot reactivate 32-bit plug-ins because they are not supported.

2. Click **Reactivate**.

RESULT

Cubase rescans the plug-in and removes it from the blocklist.

AFTER COMPLETING THIS TASK

If you want to move the plug-in back to the blocklist, click **Rescan All** in the **VST 2 Plug-in Path Settings**, and restart Cubase.

RELATED LINKS

VST Plug-in Manager Window on page 683

Track Quick Controls

Cubase allows you to set up 8 different track parameters or settings as **Track Quick Controls** for quick access.

Track Quick Controls are available for the following track types:

- Audio
- MIDI
- Instrument
- Sampler
- FX Channel
- Group Channel

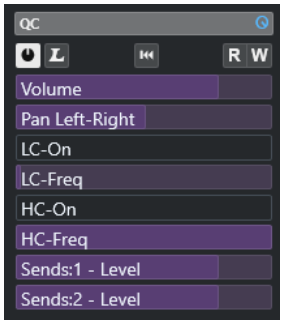
For instrument tracks and for MIDI tracks with a VST instrument assigned to on creation, that is, that you created by loading a rack instrument, **Track Quick Controls** are automatically assigned to the **Quick Controls** of the VST instrument.

For sampler tracks, **Track Quick Controls** are automatically assigned to the sound parameters of **Sampler Control**.

NOTE

You can change the default assignment by assigning different track parameters or by loading a preset.

You can assign parameters to **Quick Controls** in the **Inspector** or the **MixConsole**.



QC section in the **Inspector**

QC section in the **MixConsole**

Quick Controls assignments are saved with the project.

You can assign **Track Quick Controls** to an external remote control device. For this to work, you must connect **Track Quick Controls** with your remote controller.

You can automate parameter settings in the **QC** section using the **Read/Write** buttons (**R** and **W**).

RELATED LINKS
Track Presets on page 181
Automation on page 654
Adding Track Quick Controls in the MixConsole on page 389

Parameter Assignment

You can assign track, effect, and instrument parameters to **Quick Controls**.

For the parameter assignment, you can use the **Inspector** or the **MixConsole**. You can assign parameters manually, use the **QC Learn Mode**, or load an assignment preset.

RELATED LINKS
Assigning Track Parameters to Quick Controls on page 689
Assigning Effect Parameters to Quick Controls on page 690
Using QC Learn Mode on page 690
Adding Track Quick Controls in the MixConsole on page 389
Setting Instrument Parameter Assignments to Default on page 691
Removing Parameter Assignments on page 691
Loading Track Quick Control Assignments as Presets on page 692

Assigning Track Parameters to Quick Controls

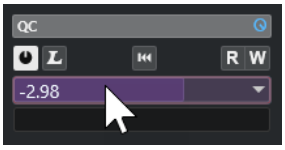
You can assign track parameters manually.

NOTE

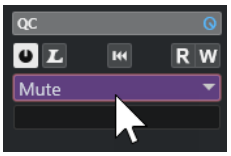
For instrument tracks and MIDI tracks with a VST instrument assigned to on creation, the main parameters of the instrument are automatically assigned to the slots in the **QC** section of the **Inspector**.

PROCEDURE

1. In the **Inspector** for your track, open the **QC** section.
2. Click the first slot to open a selector that lists all parameters for the track.
3. Select the parameter that you want to assign to the first **Quick Control**.
   The parameter name is displayed on the slot.
4. Move the mouse pointer over the slot and do one of the following depending on the parameter type:
   - Drag the slider to change the value.

   - Click to change the value.



5. Repeat these steps for all slots for which you want to assign track parameters.

RESULT

You can now control the track parameters via the **QC** section in the **Inspector** or via the **QC** section in the **MixConsole**.

Assigning Effect Parameters to Quick Controls

You can assign effect parameters to **Quick Control** slots from within plug-in panels.

NOTE

This is available for VST 3 plug-ins that support this function only.

PROCEDURE

- In the effect plug-in panel, right-click the parameter.
  - Select **Add "x" to Focus Quick Controls** (where x is the name of the parameter) to assign the parameter to the next empty slot.
  - Select **Add "x" to Focus Quick Controls Slot** (where x is the name of the parameter), and select the slot from the submenu to assign the parameter to a specific slot.

RESULT

You can now control the effect parameters via the **QC** section in the **Inspector** or via the **QC** section in the **MixConsole**.

Using QC Learn Mode

The **QC Learn Mode** allows you to assign a parameter by moving controls. This applies to all automatable controls.

PROCEDURE

1. In the **Inspector** for your track, open the **QC** section.
2. Activate **QC Learn Mode**.
3. Select the slot to which you want to assign a parameter.
4. Move the control.

RESULT

The track parameter is assigned to the corresponding control.

RELATED LINKS

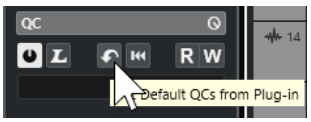
Controlling Automatable Parameters on page 692

Setting Instrument Parameter Assignments to Default

If you have changed the parameter assignment or if you manually routed a MIDI track to a VST instrument, you can retrieve the default assignments.

PROCEDURE

1. In the **Inspector** for the instrument or MIDI track, open the **QC** section.
2. Click **Get Default QCs from Plug-in**.



RESULT

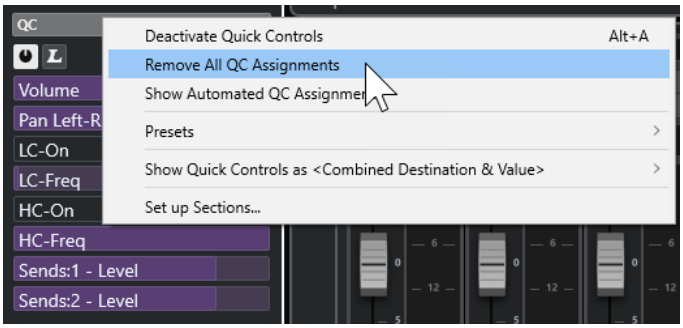
The instrument parameter assignments are set to default.

Removing Parameter Assignments

You can remove parameter assignments for individual **Quick Controls** or for all **Quick Controls** at the same time.

PROCEDURE

- Do one of the following:
  - To remove a parameter from a slot, click in the corresponding slot, and select **No parameter** from the pop-up menu.
  - To remove the **Quick Control** assignments for all slots, right-click the section header, and select **Remove All QC Assignments**.



Saving Track Quick Control Assignments as Presets

You can save **Quick Control** assignments as track presets.

PREREQUISITE

You have assigned track parameters to **Quick Controls**.

PROCEDURE

1. In the **Inspector** for your track, open the **QC** section.
2. Right-click the **QC** section header.
3. From the **Presets** submenu, select **Save Preset**.

4. Enter a name in the **Save Preset** dialog.
5. Click **OK**.

RESULT

The **Quick Control** assignment is saved as a preset.

RELATED LINKS

Assigning Track Parameters to Quick Controls on page 689

Loading Track Quick Control Assignments as Presets

You can load presets for **Quick Control** assignments.

PROCEDURE

1. In the **Inspector** for your track, open the **QC** section.
2. Right-click the **QC** section header.
3. From the **Presets** submenu, select one of the presets.

RESULT

The preset is loaded and allows you to access the channel parameters.

Controlling Automatable Parameters

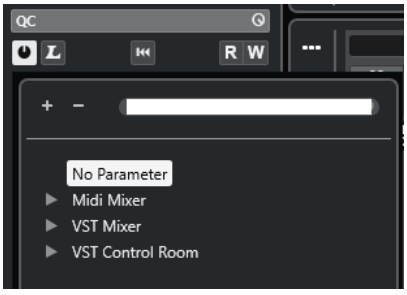
You can use **Quick Controls** to control all automatable parameters. This allows you to control parameters on other tracks using **Quick Controls**.

IMPORTANT

Use this function with caution, as you might accidentally modify parameters on other tracks.

PROCEDURE

1. Create a new, empty audio track, and open the **Quick Controls** section.
2. Hold down **Ctrl/Cmd**, and click the first **Quick Control** slot.
   The selector lists all automatable parameters.
3. Open the **VST Mixer** folder.
   The selector lists all channels that are available in the **MixConsole** of your project.



4. Assign a parameter of one particular channel to **Quick Control 1** and a different parameter of another channel to **Quick Control 2**.

RESULT

The **QC** section now allows you to control automatable parameters on different tracks.

IMPORTANT

You cannot save **Quick Control** assignments for automatable parameters on different tracks as track presets.

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 **QC** section.
3. Right-click the **QC** section header.
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.
- You can also show automated **Quick Control** assignments via the **QC** section in the **MixConsole**.

MIDI Remote

MIDI Remote allows you to integrate and use third party MIDI controllers in Cubase.

The **MIDI Remote** concept is based on dedicated scripts for specific MIDI controllers. These scripts establish a connection between a specific MIDI controller and Cubase, and include factory mappings to parameters.

The layout and functions of MIDI controllers with a script can be shown on the **MIDI Remote** tab in the lower zone of the **Project** window. If a script is available for your MIDI controller, all you have to do is plug in the controller, and you can start playing.

Cubase includes several MIDI controller scripts. If no script is yet available for your MIDI controller, we encourage you to create one.

The **MIDI Controller Surface Editor** provides you with an easy way to create your own scripts. It allows you to create a surface that describes the layout and the order of the control elements on your MIDI controller.

As an alternative for those who have some programming skills and want to dive deeper into scripting, we have created a **MIDI Remote API** that allows you to develop a script for your dedicated MIDI controller.

RELATED LINKS
Using Supported MIDI Controllers with MIDI Remote on page 698
MIDI Remote Tab on page 694
MIDI Remote Info Line on page 695
Generic Remote Page (Legacy) on page 742
MIDI Remote API on page 728
MIDI Remote Mapping Assistant on page 713
Setting up Focus Quick Controls in the MIDI Remote Mapping Assistant on page 719

MIDI Remote Tab

The **MIDI Remote** tab in the lower zone of the **Project** window allows you to load scripts for MIDI controllers. It shows the layout of your controller and its control mappings to Cubase parameters. All operations that you perform on the connected MIDI controller are displayed on the **MIDI Remote** tab.

NOTE

The purpose of the surfaces that are shown on the **MIDI Remote** tab is to map Cubase functions to your connected MIDI controller. After mapping, you can control those Cubase functions via your MIDI controller.

- To open the **MIDI Remote** tab, click the **MIDI Remote** tab in the lower zone of the **Project** window.

The **MIDI Remote** tab in the lower zone of the **Project** window

The following elements are available:

1 **Info line**

Shows the **MIDI Remote** info line.

2 **MIDI controller surface**

Shows which Cubase functions are mapped to which controls on your MIDI controller. You can use multiple MIDI controllers simultaneously. All available supported MIDI controllers are shown in the overview.

RELATED LINKS
MIDI Remote Info Line on page 695
MIDI Remote Mapping Assistant on page 713
Opening MIDI Remote in the Lower Zone on page 68

MIDI Remote Info Line

The **MIDI Remote** info line displays information about the current MIDI controller and the recently used controls.

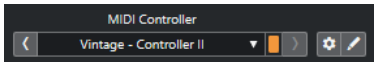
- To show or hide the info line elements, right-click the info line, and activate or deactivate the elements.

MIDI Controllers Overview

Go to MIDI Controllers Overview

Click this to display an overview of all connected and supported MIDI controllers. To go back to the surface of a specific controller, click it.

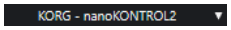
MIDI Controller



Go to Previous Controller

If you have connected more than one MIDI controller, this allows you to go to the previous MIDI controller.

MIDI Controller



Shows the name of the MIDI controller that is currently shown on the **MIDI Remote** tab in the lower zone of the **Project** window.

Incoming MIDI Data from Other Controller

If you have connected more than one MIDI controller, this shows the activity of the controller that is currently not selected.

Go to Next Controller

If you have connected more than one MIDI controller, this allows you to go to the next MIDI controller.

Open MIDI Remote Manager

Opens the **MIDI Remote Manager** that shows information about the connected MIDI controllers and the installed scripts.

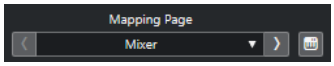
Edit MIDI Controller Surface

NOTE

This is only available if you created the script for the selected MIDI controller with the **MIDI Controller Surface Editor**.

Opens the **MIDI Controller Surface Editor** that allows you to create and edit a surface that corresponds to the layout of your MIDI controller. You can use this surface to assign Cubase functions to controls on your MIDI controller.

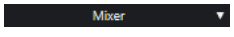
Mapping Page



Go to Previous Mapping Page

Activates the previous mapping page for the current controller.

Mapping Page



Allows you to activate a mapping page for the current controller.

Go to Next Mapping Page

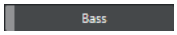
Activates the next mapping page for the current controller.

Open Mapping Assistant

Opens the **MIDI Remote Mapping Assistant**.

Quick Control Focus

Quick Control Focus



Shows the name of the item that has the quick control focus, that is, either the track name or the plug-in name.

Focus Quick Controls Lock State: Locked/Unlocked

Allows you to lock the focus of the quick controls.

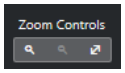
Focus Quick Controls Indicator

Displays which quick controls have the focus.

Quick Control Focus Setup

Opens the **Quick Control Focus Setup** panel.

Zoom Controls



Zoom In

Zooms in on the current MIDI controller surface in the lower zone.

Zoom Out

Zooms out of the current MIDI controller surface in the lower zone.

Zoom Full/Zoom to Fit

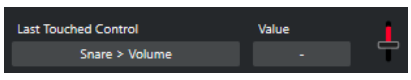
Zooms out so that the whole MIDI controller is visible.

NOTE

You can also press **G** to zoom in and **H** to zoom out of the current MIDI controller surface.

Last Touched Control

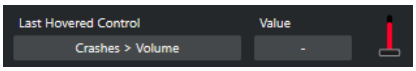
Last Touched Control



Shows the last hardware control that you touched, the host parameter that the control is assigned to, and its last value.

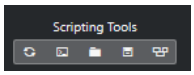
Last Hovered Control

Last Hovered Control



Shows the control that you last hovered with the mouse on the controller surface, the host parameter that the control is assigned to, and its last value.

Scripting Tools



Reload Scripts

Allows you to reload the scripts.

Open MIDI Remote Script Console

Opens the **MIDI Remote Script Console** with script messages.

Open Script Folder

Opens the location of the scripts folder.

Open MIDI Remote API - Programmer's Guide

Opens the **MIDI Remote API** programmer's guide, which allows you to write your own scripts for your MIDI controller.

Show Surface Element Rectangles

Shows the size and position of surface elements while developing scripts.

Open in Separate Window

Open in Separate Window

Opens the **MIDI Remote** tab in a separate window.

RELATED LINKS
MIDI Remote API on page 728
MIDI Remote Manager Window on page 721
Quick Control Focus Setup Panel on page 720

Using Supported MIDI Controllers with MIDI Remote

The layout and the functions of supported MIDI controllers, that is, controllers with a script, are shown on the **MIDI Remote** tab in the lower zone of the **Project** window.

PREREQUISITE

If you have previously used an earlier version of Cubase, and if you already set up your MIDI controller using **Generic Remote**, **Track Quick Controls** or **VST Quick Controls**, open the **Studio Setup** dialog, open the **MIDI Port Setup** page. Set the corresponding MIDI ports to **Not**

Connected. This ensures that no double mappings occur when the **MIDI Remote** functionality automatically detects those MIDI controllers on connection.

NOTE

Some of the supported MIDI controllers require additional settings to work with Cubase. To open a document with the necessary information, open the **MIDI Remote** tab, and click **Open Setup Information** in the upper right corner of the MIDI controller surface.

PROCEDURE

1. Connect your MIDI controller to your computer.
2. In the lower zone of the **Project** window, click **MIDI Remote**.
3. Optional: If you have connected several supported MIDI controllers, click the controller surface that you want to use in the MIDI controllers overview.

RESULT

In the **MIDI Remote** tab, the layout and the functions of the connected MIDI controller are displayed. Here, you can also see which Cubase functions are mapped to controls on your MIDI controller.

RELATED LINKS

MIDI Port Setup Page on page 25
MIDI Remote on page 694
VST Quick Controls on page 740
Track Quick Controls on page 739

Other MIDI Controllers and MIDI Remote

You can also use MIDI controllers that do not have a ready-to-use script. For this purpose, you must create a custom controller surface.

Cubase offers an easy way to create your own controller surface. It includes the following steps:

- Adding a MIDI controller surface in the **Add MIDI Controller Surface** dialog.
- Editing the MIDI controller surface in the **MIDI Controller Surface Editor**.
- Mapping the controls to Cubase functions in the **MIDI Remote Mapping Assistant**.

You can also create controller surfaces by writing a script with the **MIDI Remote API**.

RELATED LINKS

Adding MIDI Controller Surfaces on page 700
Editing MIDI Controller Surfaces on page 700
MIDI Controller Surface Editor on page 706
Mapping Controls on MIDI Controllers to Cubase Functions on page 702
MIDI Remote Mapping Assistant on page 713
MIDI Remote API on page 728

Adding MIDI Controller Surfaces

If you want to use a MIDI controller that is not yet supported and, for this reason, has no script, you must first add a new MIDI controller surface for it.

PREREQUISITE

If you have previously used an earlier version of Cubase, and if you already set up your MIDI controller using **Generic Remote**, **Track Quick Controls** or **VST Quick Controls**, open the **Studio Setup** dialog, open the **MIDI Port Setup** page, and set the corresponding MIDI ports to **Not Connected**. This ensures that no double mappings occur when the **MIDI Remote** functionality automatically detects those MIDI controllers on connection.

PROCEDURE

1. On the **MIDI Remote** info line, click **Go to MIDI Controllers Overview**.
2. In the overview, click **Add MIDI Controller Surface**.

3. In the **Add MIDI Controller Surface** dialog, enter the required information, and select the MIDI ports of your MIDI controller.

   NOTE

   - Special characters are not allowed in that dialog.
   - Make sure that you select the correct MIDI ports of your MIDI controller. Otherwise, your surface script will not work as expected.
4. Click **Create MIDI Controller Surface**.

RESULT

The **MIDI Controller Surface Editor** opens in the lower zone of the **Project** window. Here, you can edit the controller surface.

RELATED LINKS

Add MIDI Controller Surface Dialog on page 704
Editing MIDI Controller Surfaces on page 700
MIDI Controller Surface Editor on page 706
MIDI Remote Mapping Assistant on page 713
Deleting Unused MIDI Controller Scripts on page 726

Editing MIDI Controller Surfaces

You can edit MIDI controller surfaces via the **MIDI Controller Surface Editor** in the lower zone of the **Project** window.

PREREQUISITE

You have added a new surface using the **Add MIDI Controller Surface** dialog and clicked **Create MIDI Controller Surface** to open the **MIDI Controller Surface Editor**.

PROCEDURE

1. In the **MIDI Controller Surface Editor**, follow the instructions on the message board to create a surface that corresponds to the layout of your MIDI controller.

When you touch the hardware controls of your MIDI controller, Cubase detects the incoming MIDI messages and associates them with a control in the **MIDI Controller Surface Editor**.

2. When you are done, do one of the following:
   - To map the controls on your MIDI controller to Cubase functions, click **Open Mapping Assistant** on the **MIDI Controller Surface Editor** info line.
   - To close the **MIDI Controller Surface Editor**, click **Go to MIDI Controller Surface**.

RESULT

Your controller surface is added to the **MIDI Remote** tab.

RELATED LINKS

Adding MIDI Controller Surfaces on page 700
MIDI Controller Surface Editor on page 706
MIDI Remote Tab on page 694

Importing MIDI Controller Surface Scripts

You can import MIDI controller surface scripts from other users.

PREREQUISITE

Connect the controller that corresponds to the MIDI controller script that you want to import.

PROCEDURE

1. Do one of the following:
   - Select **Studio** > **MIDI Remote Manager** to open the **MIDI Remote Manager**.
   - Click **Add MIDI Controller Surface** on the **MIDI Remote** tab to open the **Add MIDI Controller Surface** dialog.
2. On the info line, click **Import Script**.
3. In the file dialog that opens, locate and select a `.midiremote` file, and click **Open**.

   `.midiremote` files contain script files that have the file extension `.js` or `.json`, `.pdf` files with setup information, `.sysex` files, and mappings.

   NOTE

   Always use the **Import Script** and **Export Script** functions to exchange scripts with other users, instead of just copying `.js` or `.json` files. Otherwise, the additional files and settings are not included.

RESULT

The MIDI controller surface for the imported script opens in the lower zone of the **Project** window.

If the corresponding MIDI controller is not connected, a warning message is shown.

RELATED LINKS

Add MIDI Controller Surface Dialog on page 704
MIDI Remote Manager Window on page 721
MIDI Controller Settings Pane on page 712

Mapping Controls on MIDI Controllers to Cubase Functions

You can map controls on your MIDI controller to Cubase functions.

PREREQUISITE

You have connected a MIDI controller to your computer, and its controller surface is shown on the **MIDI Remote** tab, in the lower zone of the **Project** window.

PROCEDURE

1. Do one of the following:
   - On the info line of the **MIDI Controller Surface Editor**, click **Open Mapping Assistant**.
   - On the info line of the **MIDI Remote** tab, click **Open Mapping Assistant**.
   - On the toolbar of the **Project** window, click **Open MIDI Remote Mapping Assistant**.
2. Do one of the following to select a control on your MIDI controller:
   - Touch the control on your MIDI controller.
   - Click the control in the controller surface of the **MIDI Remote Mapping Assistant**.

   The name of the control is shown in the **Mapping Assistant**.
3. Do one of the following to select a Cubase function:
   - Select it from the **Functions Browser**.

     NOTE

     If the **Functions Browser** is not shown in the **MIDI Remote Mapping Assistant**, activate **Show/Hide Functions Browser**.
   - Right-click a function in Cubase, and select **Pick for MIDI Remote Mapping**.

   The name of the function is shown in the **Mapping Assistant**.
4. Click **Apply Mapping**.
5. Repeat the steps above to map more Cubase functions to hardware controls.

RESULT

The hardware controls on your controller are now mapped to Cubase functions.

TIP

To quickly apply mappings, you can also try one of the following:

- Select a control on your MIDI controller so that it is shown in the **Mapping Assistant**, and double-click a Cubase function in the **Functions Browser** to map it.
- Select a Cubase function so that it is shown in the **Mapping Assistant**, and double-click a control in the controller surface of the **MIDI Remote Mapping Assistant** to map it.

TIP

In the **Mappings** section of the **MIDI Remote Mapping Assistant**, you can view and edit mapping details.

RELATED LINKS
MIDI Remote Mapping Assistant on page 713
Mappings on page 716

Removing Mappings via Right-Click

You can remove your mappings via right-click from controller surfaces that you have created in the **MIDI Controller Surface Editor**.

PREREQUISITE

You have mapped a control on your MIDI controller to a Cubase function.

PROCEDURE

1. On the **MIDI Remote** info line, open the **MIDI Controller** pop-up menu, and select the controller surface that contains the mapping that you want to remove.
2. Right-click the control whose mapping you want to remove.

3. From the context menu, select **Remove Mapping**.

RESULT

The mapping is removed from the control.

RELATED LINKS
Mapping Controls on MIDI Controllers to Cubase Functions on page 702

Making Changes on MIDI Controller Surfaces

You can make changes on controller surfaces that you created in the **MIDI Controller Surface Editor**.

PREREQUISITE

You have created a controller surface in the **MIDI Controller Surface Editor**.

NOTE

Controller surfaces that you created with a **MIDI Remote API** script, and controller surfaces from factory scripts cannot be edited.

PROCEDURE

1. On the **MIDI Remote** info line, open the **MIDI Controller** pop-up menu, and select the controller surface that you want to edit.

   NOTE

   Edit MIDI Controller Surface is only available for controller surfaces that you created in the **MIDI Controller Surface Editor**.

2. On the info line, click **Edit MIDI Controller Surface**.

   NOTE

   You can also move the mouse pointer over the surface and click **Edit MIDI Controller Surface**.

RESULT

In the lower zone of the **Project** window, the **MIDI Controller Surface Editor** opens, where you can make changes to your controller surface.

RELATED LINKS

MIDI Controller Surface Editor on page 706
Editing MIDI Controller Surfaces on page 700

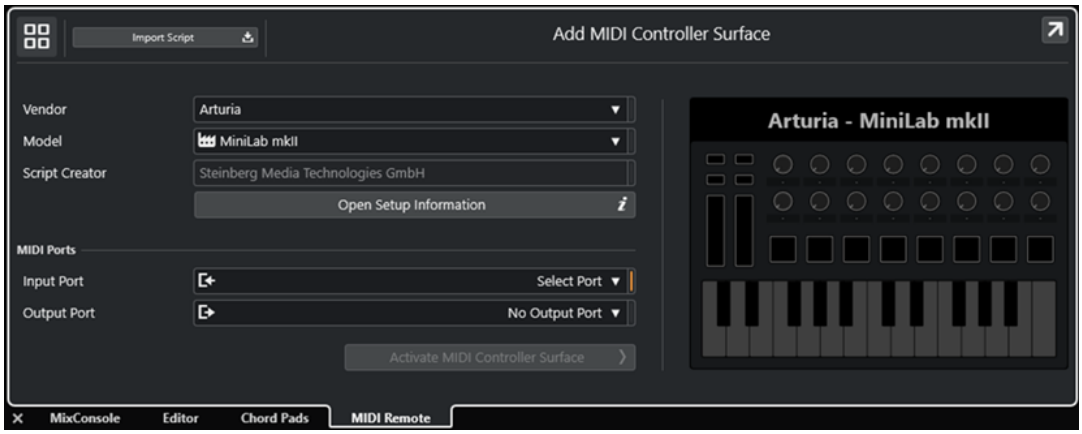
Add MIDI Controller Surface Dialog

The **Add MIDI Controller Surface** dialog allows you to add a surface that corresponds to the layout of your MIDI controller.

- To open the **Add MIDI Controller Surface** dialog, click **Add MIDI Controller Surface** on the **MIDI Remote** tab.

NOTE

If the **MIDI Remote** tab shows a controller surface, click **Go to MIDI Controllers Overview** on the **MIDI Remote** info line, then click **Add MIDI Controller Surface**.



Go to MIDI Controllers Overview

Cancels the operation and returns to the **MIDI Controllers Overview**.

Import Script

Allows you to import MIDI controller scripts.

Vendor

Opens a pop-up menu where you can select the vendor of the connected MIDI controller from a list.

If the vendor of your MIDI controller is not listed, scroll to the end of the list, and select **Add Vendor** to enter the information manually.

Model

Allows you to enter information about the model of your MIDI controller.

Script Creator

Allows you to enter information about the script creator of your MIDI controller.

NOTE

Special characters are not allowed.

Open Setup Information

Opens setup information for the selected MIDI controller. This is only available for particular MIDI controllers that require specific settings to communicate with Cubase.

Input Port

Allows you to select the MIDI input port of your MIDI controller.

Output Port

Allows you to select the MIDI output port of your MIDI controller.

NOTE

Make sure that you select the MIDI port of your MIDI controller. Otherwise, your surface script does not work as expected.

Create MIDI Controller Surface

Adds the surface to the **MIDI Controllers Overview** and opens the **MIDI Controller Surface Editor**. In the editor, you can create and edit a surface that allows you to assign Cubase functions to controls on your MIDI controller.

RELATED LINKS
MIDI Remote Page on page 27
Importing MIDI Controller Surface Scripts on page 701

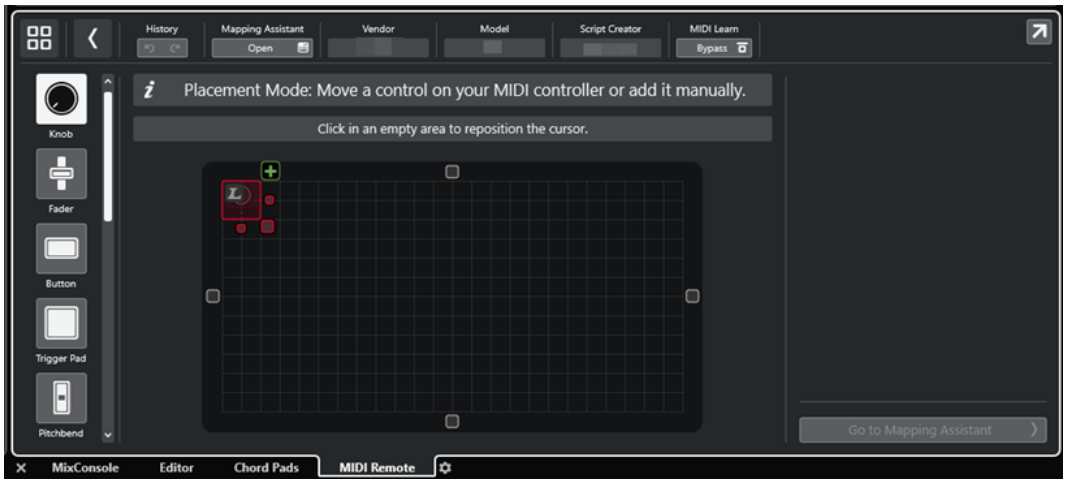
MIDI Controller Surface Editor

The **MIDI Controller Surface Editor** allows you to create a surface that corresponds to the layout of your MIDI controller. You can then use this surface to assign Cubase functions to controls on your MIDI controller.

- To open the **MIDI Controller Surface Editor**, click **Go to MIDI Controllers Overview** on the **MIDI Remote** info line. In the overview, click **Add MIDI Controller Surface**. In the **Add MIDI Controller Surface** dialog, fill in the required information, and click **Create MIDI Controller Surface**.

NOTE

If you already created a script for the selected MIDI controller using the **MIDI Controller Surface Editor**, you can also click **Edit MIDI Controller Surface** on the surface or on the **MIDI Remote** info line to reopen the editor and make changes.



Info line

Displays information about the current MIDI controller, allows you to undo or redo the latest edits, and to access the **MIDI Remote Mapping Assistant**.

Message board

Shows if you are in **Placement Mode** or in **Edit Mode** and provides information about the steps that you can perform.

Control types

Allows you to select the type of control that you want to add. You can add knobs, horizontal or vertical faders, buttons, trigger pads, etc.

Surface display

Shows the added controls and allows you to edit them. The surface that you create allows you to map controls of your MIDI controller to Cubase functions at a later point

in time. The surface is added to the **MIDI Controllers Overview** on the **MIDI Remote** tab.

Properties

Shows the properties that are assigned to the selected controls. The **Properties** are available in **Edit Mode**.

Go to Mapping Assistant

Closes the **MIDI Controller Surface Editor** and opens the **Mapping Assistant** that allows you to map controls of your MIDI controller to Cubase functions.

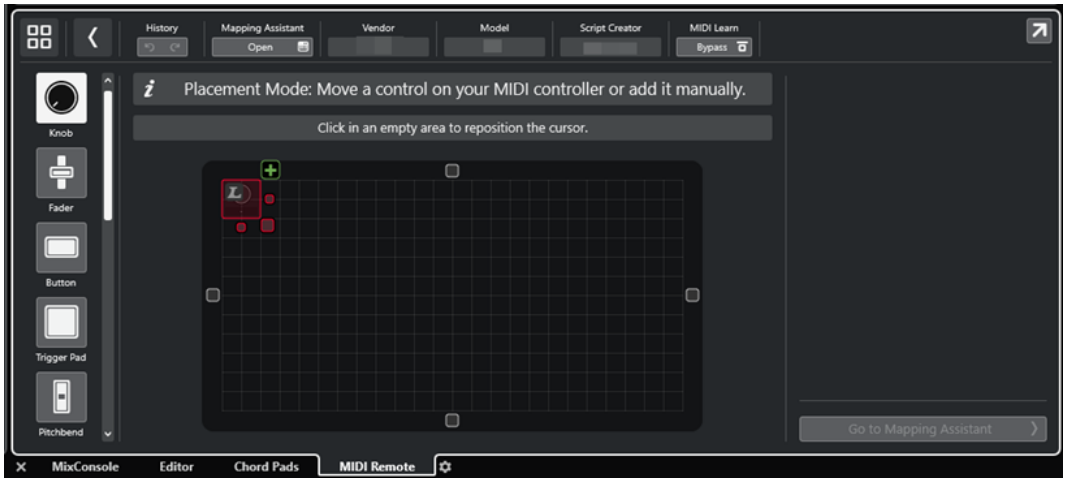
RELATED LINKS
Adding MIDI Controller Surfaces on page 700
Editing MIDI Controller Surfaces on page 700
MIDI Remote Tab on page 694
MIDI Remote API on page 728
Placement Mode and Edit Mode on page 707
Add MIDI Controller Surface Dialog on page 704
MIDI Remote Mapping Assistant on page 713
Properties on page 710

Placement Mode and Edit Mode

The different steps to take when creating a new surface for your MIDI controller in the **MIDI Controller Surface Editor** are divided into two modes: **Placement Mode** and **Edit Mode**.

Placement Mode

Placement Mode allows you to add controls to the surface display. It is indicated by a red cursor.



The position and the size of the cursor determine the position and the size of the added control.

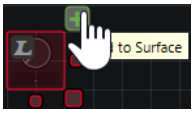
- To change the position of the cursor, click an empty area, or use **Up Arrow**, **Down Arrow**, **Left Arrow**, or **Right Arrow**.
- To change the size of the cursor, use the **Resize** handles, or hold down **Shift** while using **Up Arrow**, **Down Arrow**, **Left Arrow**, or **Right Arrow**.

NOTE

- All editing in the surface display is based on a fixed grid.
- You can also adjust the position and the size of the added control in **Edit Mode**.

You can add controls to the surface display either manually or via the **MIDI Learn** function that allows Cubase to learn MIDI messages from a MIDI controller:

- To add controls manually, select a control type to the left of the surface display. In the top right corner of the cursor, click **Add to Surface**.



- To add controls via **MIDI Learn**, select a control type to the left of the surface display, and move the corresponding hardware controls.

NOTE

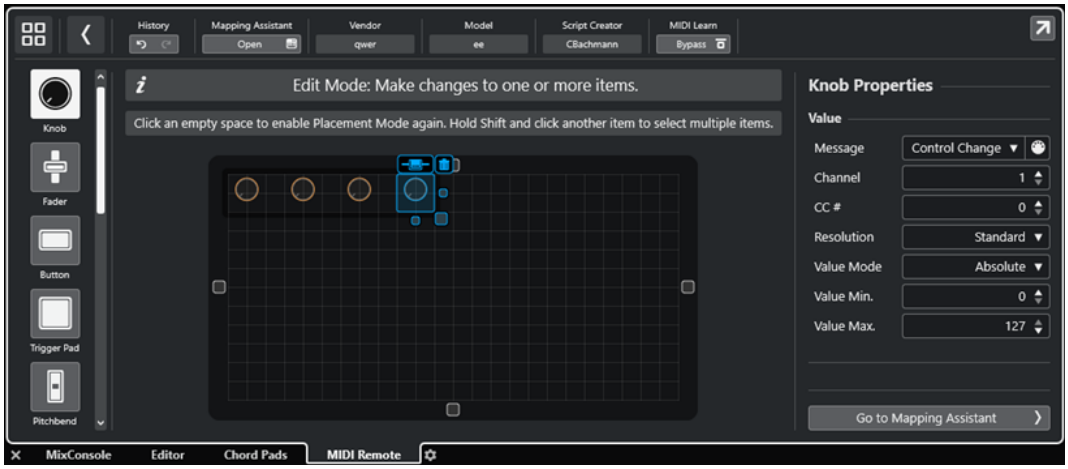
- Adding controls via **MIDI Learn** is not possible for specific control types, such as **Push Encoders** or **Blind Panels**. It is also not possible if you activate **Bypass** for **MIDI Learn** on the info line.
- If **MIDI Learn** is available for a control, this is indicated by an L symbol on the cursor . If **MIDI Learn** is not available, the L symbol is crossed out .

NOTE

As soon as you add controls in the **MIDI Controller Surface Editor**, a black frame is shown in the event display to indicate the size of the added surface.

Edit Mode

Edit Mode allows you to edit the selected control. In **Edit Mode**, the selected control is displayed in blue.



- To change the position of a control, click and drag, or use **Up Arrow**, **Down Arrow**, **Left Arrow**, or **Right Arrow**.
- To change the size of the control, use the **Resize** handles.
- To select multiple controls, hold down **Shift**.
- To create a label for your control, click **Create Label Field**.
- To specify the properties of the controls, use **Properties** to the right of the surface display.
- To remove a control, click **Remove from Surface**.

RELATED LINKS
MIDI Remote Tab on page 694

MIDI Remote API on page 728
MIDI Controller Surface Editor on page 706

Control Types

You can add different types of controls to your MIDI controller surface. What control type to choose depends on the layout of your MIDI controller.

- To select a control type, open the **MIDI Controller Surface Editor**. To the left of the surface display, click a control type.

  NOTE

  You can add labels for controls by selecting one or several controls and clicking **Create Label Field**. As soon as you map your control in the **MIDI Remote Mapping Assistant**, the label field is shown, and the label changes to the name of the mapped parameter.

The following control types are available:

Knob

Allows you to add a knob.

Fader

Allows you to add a fader. You can change the size and the aspect ratio of the added control to determine whether to add a vertical or horizontal fader.

Button

Allows you to add a button for on/off control items.

Trigger Pad

Allows you to add a trigger pad. Trigger pads can show the on/off status and values in between.

Pitchbend

Allows you to add a pitchbend wheel. The value is shown in the center position, or at the position retrieved from the hardware.

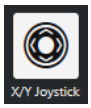
Modulation

Allows you to add a modulation wheel. The value is shown in the bottom position, or at the position retrieved from the hardware.

X/Y Pad

Allows you to add an x/y pad.

X/Y Joystick

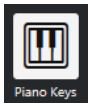


Allows you to add an x/y joystick.

Push Encoder

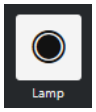
Allows you to add a push encoder. Compared to a knob, this has an additional parameter that allows you to set up the message for the push value.

Piano Keys



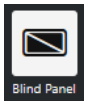
Allows you to add piano keys for decorative purposes. You can adjust the keyboard range, but you cannot map host parameters to this control type.

Lamp



Allows you to add a lamp. You can use this as an indicator for showing the value of a mapping.

Blind Panel



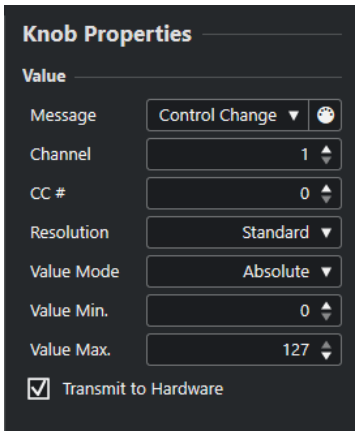
Allows you to add a blind panel for decorative purposes. You cannot map host parameters to this item.

RELATED LINKS
MIDI Controller Surface Editor on page 706
Placement Mode and Edit Mode on page 707

Properties

The **Properties** are available in **Edit Mode**. They show the properties for the control that you select from the **MIDI Controller Surface Editor**.

- To show the **Properties**, open the **MIDI Controller Surface Editor**. Use the **Placement Mode** to create and place surface controls that are assigned to your MIDI controller. Select a surface control from the surface display to activate **Edit Mode**.



Depending on the control type, the following properties are available:

Message

Shows the MIDI message type that is assigned to the control. Message types can be **Note**, **Control Change**, **Pitchbend**, and **Aftertouch**.

To pick up incoming MIDI messages from your hardware, click **MIDI Monitor**, and use the controls on your hardware.

Channel

Shows the MIDI channel that is assigned to the control.

CC #

Shows the MIDI controller number that is assigned to the control.

CC Mode/Resolution

Allows you to set the resolution of the controls of your MIDI controller: **Standard**, **14 Bit**, or **14 Bit NRPN**.

Value Mode

Allows you to set the value mode of the controls of your MIDI controller to **Absolute**, which means that MIDI controllers send absolute value messages from 0 to 127.

You can also select one of the relative modes. Relative or endless MIDI controllers can send value increment and value decrement messages. This is useful to avoid parameter jumps that can occur when the state of a control in the software and the corresponding control on the hardware MIDI controller differ. The following relative modes are available:

- **Relative Signed Bit**

  Increases from 065 to 127, decreases from 001 to 063.
- **Relative Binary Offset**

  Increases from 065 to 127, decreases from 063 to 000.
- **Relative Twos Complement**

  Increases from 001 to 64, decreases from 127 to 065.

NOTE

We suggest that you experiment with the modes until you find what works best for you.

Value Min.

The minimum value for the control.

Value Max.

The maximum value for the control.

Transmit to Hardware

By default, mapped MIDI CCs are sent back to the MIDI controller. If this is not what you want, deactivate this option.

NOTE

This is only available if you assigned a MIDI output to your MIDI controller surface.

Shape

For some controls, such as blind panels or lamps, you can specify if the shape should be rectangular or circular.

First Key

Allows you to define the first key for piano keys.

Last Key

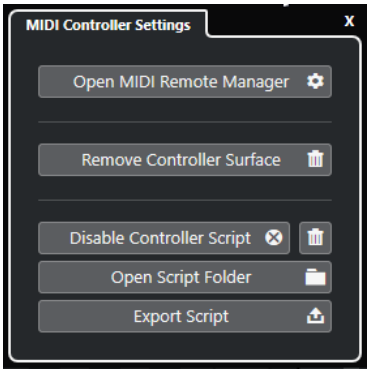
Allows you to define the last key for piano keys.

RELATED LINKS
MIDI Controller Surface Editor on page 706
Edit Mode on page 708
Output Port on page 705

MIDI Controller Settings Pane

The **MIDI Controller Settings** pane allows you to access the most important controller settings.

- To open the **MIDI Controller Settings** for the selected MIDI controller, click **MIDI Controller Settings** to the top right of the corresponding MIDI controller surface.



Open MIDI Remote Manager

Opens the **MIDI Remote Manager**, which shows information about the connected MIDI controllers and the installed scripts.

Remove Controller Surface

Removes the selected controller surface.

NOTE

This is only available for controller surfaces that are currently disconnected.

Disable Controller Script

Disables the script of the selected controller surface.

Delete Script

Deletes the script of the selected controller surface.

Open Script Folder

Opens the location of the scripts folder.

Export Script

Exports the script of the selected controller surface.

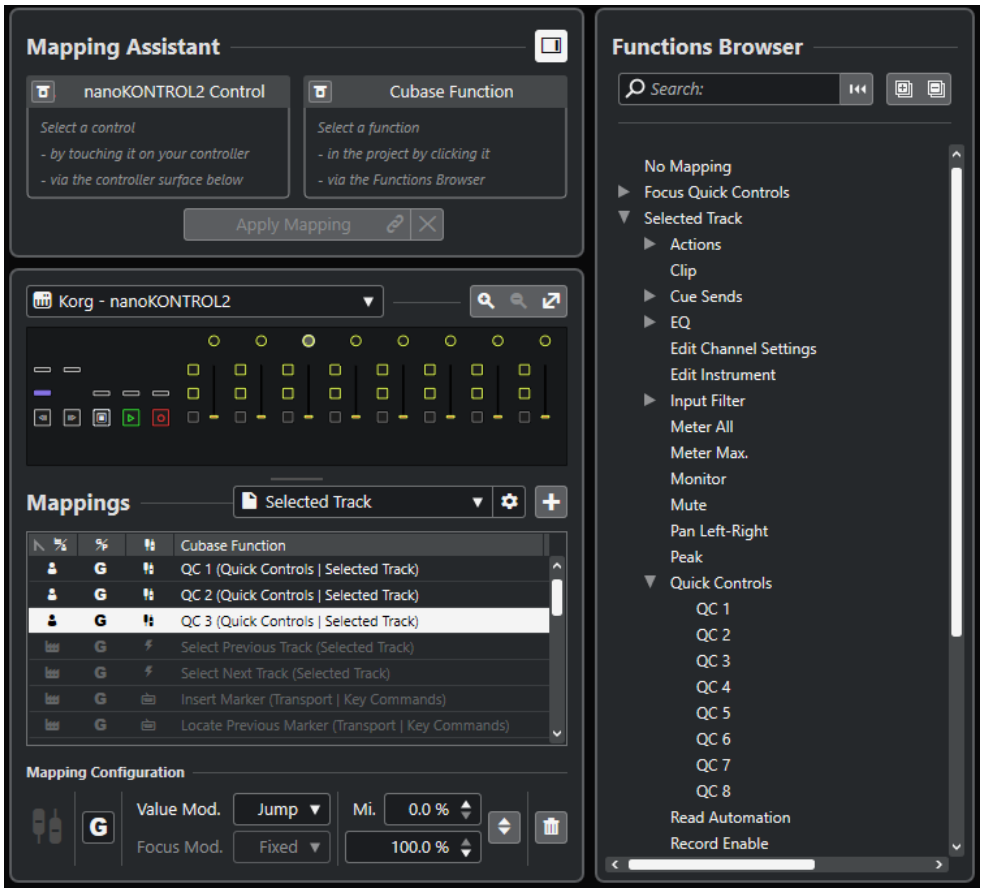
RELATED LINKS
Disabling Controller Scripts on page 726
Deleting Unused MIDI Controller Scripts on page 726
Importing MIDI Controller Surface Scripts on page 701
MIDI Remote Manager Window on page 721
MIDI Remote Manager - MIDI Controllers Tab on page 722

MIDI Remote Mapping Assistant

The **MIDI Remote Mapping Assistant** allows you to map the controls of your MIDI controller to functions in Cubase.

To open the **MIDI Remote Mapping Assistant**, select a MIDI controller from the **MIDI Controller** pop-up menu on the info line of the **MIDI Remote** tab, and do one of the following:

- On the MIDI controller surface, double-click a control.
- On the info line of the **MIDI Remote** tab, click **Open Mapping Assistant**.
- On the toolbar of the **Project** window, click **Open MIDI Remote Mapping Assistant**.
- On the info line of the **MIDI Controller Surface Editor**, click **Open Mapping Assistant**.



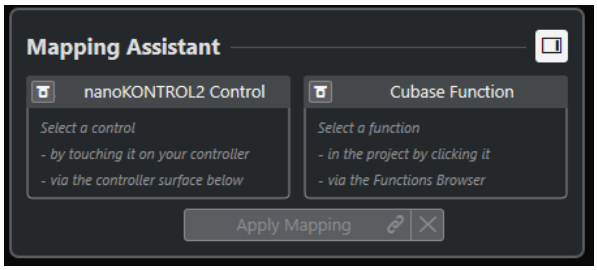
The following sections are available:

Mapping Assistant

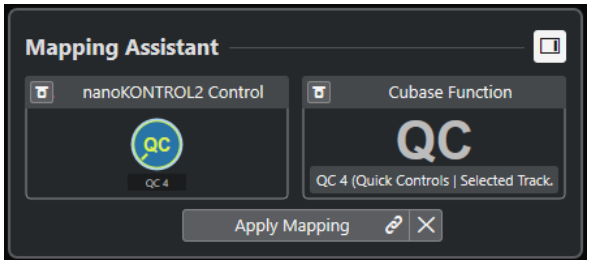
Show/Hide Functions Browser

Opens/closes the **Functions Browser** in the right zone.

Mapping Assistant



Mapping Assistant without Mapping



A control on your MIDI controller and a Cubase function selected for mapping

The **Mapping Assistant** guides you through the mapping process. It allows you to select a control on your MIDI controller and a Cubase function for mapping.

Bypass MIDI Controller Learn Mode

- If this is deactivated, you can touch a control on your MIDI controller or click a control in the controller surface to select it for mapping.
- If this is activated, you must click a control in the controller surface to select it for mapping. Activate this if your MIDI controller constantly sends MIDI data and thereby disturbs the mapping.

Bypass Function Learn Mode

- If this is deactivated, you can use a Cubase function or click a function in the **Functions Browser** to select it for mapping.
- If this is activated, you must right-click a Cubase function and select **Pick for MIDI Remote Mapping** to select it for mapping. You can also click a function in the **Functions Browser**.

Apply Mapping

Applies the mapping.

Reset Mapping

Allows you to reset the mapping.

Controller Surface

Controller Surface

Shows a representation of your MIDI controller that allows you to view and edit mappings. If your MIDI controller offers different layer zones, an indicator displays the active layer zone. You can use the mouse wheel to switch from one layer zone to the other.

NOTE

You might need to zoom in on the controller surface to display the layer zone indicator.

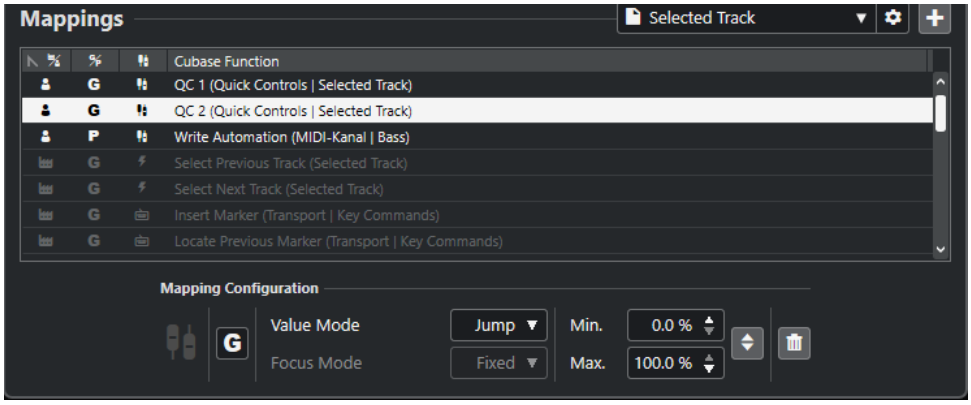
Zoom controls

Allow you to zoom in and out of the controller surface.

NOTE

You can also press **G** to zoom in and **H** to zoom out of the current controller surface.

Mappings



Mapping Page

Shows the active mapping page.

Mapping Page Settings

Opens a menu that allows you to delete, rename, or duplicate the selected mapping page.

Add Mapping Page

Opens a dialog that allows you to add a new, empty mapping page.

Mapping List

To sort the list by a specific attribute, click the corresponding column header.

- **Mapping Page Type**

  Indicates whether the mapping is saved as a **Factory** mapping or as a **User** mapping.

- **Mapping Scope**

  Indicates whether the mapping has a **Global** scope or a **Project** scope.

- **Mapping Type**

  Shows the type of the selected mapping:

  - **Parameter Mapping**

    A mapping between a control on your MIDI controller and Cubase value.

  - **Key Command Mapping**

    A mapping between a control on your MIDI controller and a Cubase key command.

  - **Action Mapping**

    A mapping between a control on your MIDI controller and a mapping page action, such as switching to another mapping page, for example.

- Cubase **Functions**

  Displays the Cubase function that is mapped.

The **Mapping Configuration** shows the details for the mapping that you select from the mapping list.

Value Mode

Allows you to configure how Cubase functions take over values from controls on your MIDI controller. This is useful in case the control value does not match the parameter value.

- **Jump**

  Sends a new value to the Cubase function, as soon as you move the control on your MIDI controller. This can result in abrupt value changes.

- **Pickup**

  Picks up on the value of the Cubase function, as soon as the control that you move on your MIDI controller reaches that value. This results in smooth value changes but requires you to estimate the pickup value.

- **Scaled**

  Compares the value of the Cubase function to the control value, as soon as you move the control on your MIDI controller, and approaches the two values in a smooth way. As soon as the values are identical, the function follows the control value. This results in smooth value changes.

- **Toggle**

  Allows you to toggle the state of the mapped function. This is useful for mute and solo controls, for example.

Focus Mode

- **Fixed**

  Sets a fixed focus to the Cubase function that is picked for mapping.

- **Track Selection**

  Sets the focus according to the track selection.

Min. Value/Max. Value

Allows you to set the value range of the mapped Cubase function.

Invert Minimum and Maximum

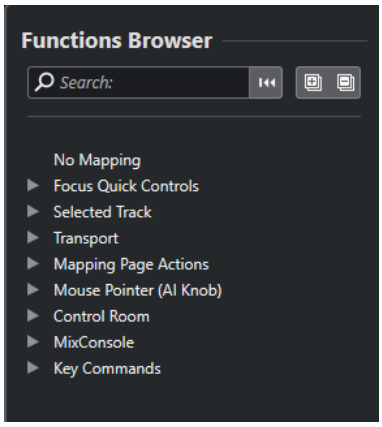
Inverts the minimum and maximum values.

Remove Selected Mappings

Allows you to remove the selected mapping.

Functions Browser

Functions Browser



This section shows the mappable functions in a browser view with different categories.

Select a function in the browser to show it in the Cubase **Function** section of the **Mapping Assistant**.

Search

Allows you to search for functions by typing in their name or parts of their name.

Reset Filter

Allows you to reset the search filter.

Expand All

Expands all entries.

Collapse All

Collapses all entries.

RELATED LINKS
Mapping Pages and Mapping Scopes on page 718
Mapping Controls on MIDI Controllers to Cubase Functions on page 702
Adding MIDI Controller Surfaces on page 700

Mapping Pages and Mapping Scopes

Mapping Pages

All mappings of Cubase functions and controls on your MIDI controller are saved on mapping pages. A MIDI controller can have different mapping pages for different purposes, but only one mapping page can be active. The active mapping page is shown in the lower zone.

Cubase comes with several scripts that include one or more factory pages with factory mappings. Neither the factory pages nor the factory mappings can be removed. However, you can use factory pages as a basis for your own user mappings. All mappings that you apply are saved as user mappings.

The **Mapping Page Type** column of the **MIDI Remote Mapping Assistant** indicates if a mapping is a user mapping or a factory mapping .

Mapping Scopes

All factory mappings are automatically set to **Global** scope, that is, they are saved with the program. You cannot change the mapping scope for factory mappings.

All user mappings that you add by selecting a function in the **Functions Browser** are automatically set to **Global** scope.

All user mappings that you add by picking a Cubase function or by using it are considered ad hoc mappings, and therefore, automatically set to **Project** scope. The only exception are functions that can also be found in the **Functions Browser**. These are automatically set to **Global** scope.

NOTE

For user mappings, you can change the mapping scope manually by selecting an option from the **Mapping Scope** menu in the **Mapping Configuration** section.

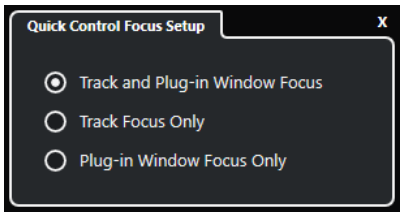
RELATED LINKS
MIDI Remote Mapping Assistant on page 713

Focus Quick Controls

Focus Quick Controls are focus-dependent quick controls. This means that the active window focus determines which parameters respond to your MIDI controller.

Focus Quick Controls are the most versatile form of quick controls. You can set them up in the **Functions Browser** of the **MIDI Remote Mapping Assistant**.

To set up the focus behavior for the focus quick controls, activate one of the options in the **Quick Control Focus Setup**. All hardware controls on your MIDI controller that are mapped as focus quick controls follow this focus.



By default, **Track and Plug-in Window Focus** is active. As a result, the following conditions apply:

- If the **Project** window has the focus, your hardware controls the quick controls of the selected track.
- If the plug-in window has the focus, your hardware controls the quick controls of the active plug-in window.

RELATED LINKS
Quick Control Focus Setup Panel on page 720
Setting up Focus Quick Controls in the MIDI Remote Mapping Assistant on page 719
Quick Control Focus on page 697
VST Instrument Control Panel on page 665
Effect Control Panel on page 423
Locking the Quick Control Focus on page 720

Setting up Focus Quick Controls in the MIDI Remote Mapping Assistant

You can set up **Focus Quick Controls** in the **MIDI Remote Mapping Assistant**. **Focus Quick Controls** are focus-dependent quick controls, that is, the active window focus determines which parameters respond to your MIDI controller.

PREREQUISITE

You have connected a MIDI controller to your computer, and its controller surface is shown on the **MIDI Remote** tab in the lower zone of the **Project** window.

PROCEDURE

1. Do one of the following:
   - On the **MIDI Remote** info line, click **Open Mapping Assistant**.
   - On the **Project** window toolbar, click **Open MIDI Remote Mapping Assistant**.
2. Do one of the following to select a hardware control on your MIDI controller:
   - Click the control in the controller surface of the **MIDI Remote Mapping Assistant**.
   - Touch the control on your MIDI controller.

   The name of the control is displayed in the **Mapping Assistant**.
3. Activate **Show/Hide Functions Browser**.

4. In the **Focus Quick Controls** category of the **Functions Browser**, select a quick control.
5. Click **Apply Mapping**.
6. Repeat the steps above to map more **Focus Quick Controls** to your MIDI controller.

RESULT

The **Focus Quick Controls** are now mapped to your MIDI controller.

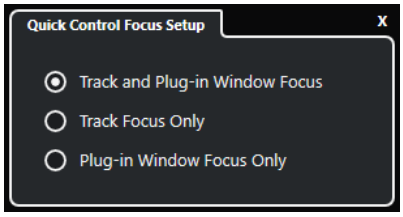
RELATED LINKS

Using Supported MIDI Controllers with MIDI Remote on page 698
Other MIDI Controllers and MIDI Remote on page 699
Adding MIDI Controller Surfaces on page 700
Editing MIDI Controller Surfaces on page 700
Focus Quick Controls on page 719
Locking the Quick Control Focus on page 720
VST Instrument Control Panel on page 665
Effect Control Panel on page 423

Quick Control Focus Setup Panel

The **Quick Control Focus Setup** panel allows you to configure the focus behavior for the focus quick controls.

- To open the **Quick Control Focus Setup** panel, click **Quick Control Focus Setup** on the **MIDI Remote** info line.



The following options are available:

Track and Plug-in Window Focus

The quick control focus depends on the active window. If the **Project** window is active, the selected track has the quick control focus. If the plug-in window is active, the plug-in has the focus.

Track Focus Only

The quick control focus is always on the selected track.

Plug-in Window Focus Only

The quick control focus is always on the active plug-in window.

RELATED LINKS

MIDI Remote Info Line on page 695

Locking the Quick Control Focus

You can lock the **Quick Control Focus** to a specific track or plug-in window.

PROCEDURE

1. Do one of the following:

- To lock the focus to a specific plug-in window, open the corresponding window.
- To lock the focus to a specific track, select the track from the track list, and make sure that the **Quick Control Focus** section is shown on the **MIDI Remote** info line.

2. Activate the lock by clicking **Focus Quick Controls Lock State: Unlocked**.

RESULT

The **Quick Control Focus** section of the **MIDI Remote** info line shows the name of the track or the plug-in window that has the focus. The corresponding set of quick controls remains active, even if another window gets the focus.

RELATED LINKS

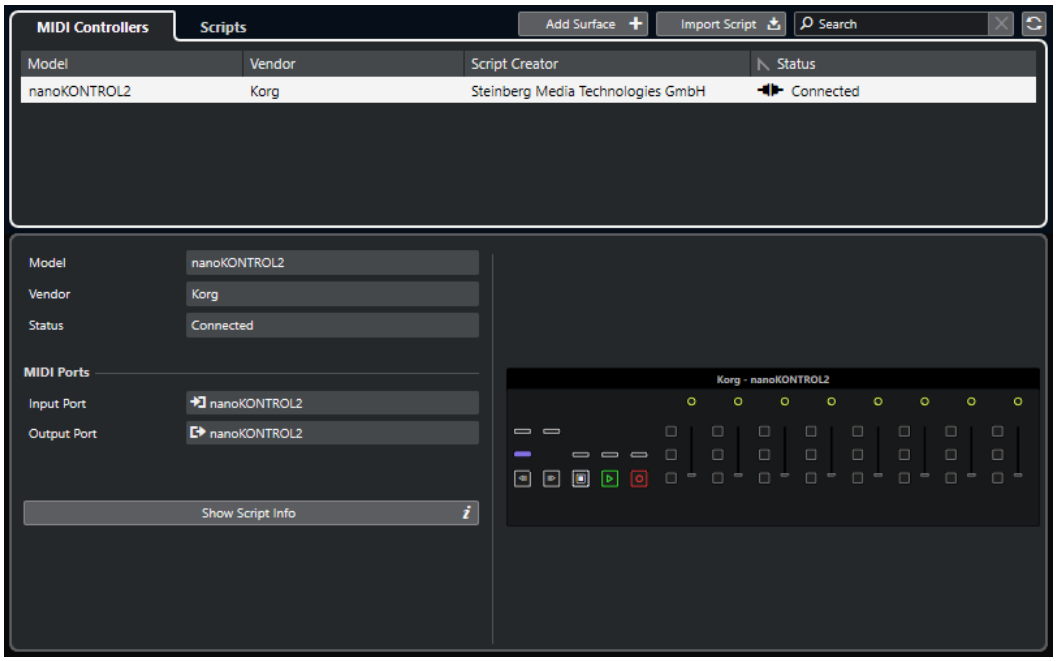
Setting up Focus Quick Controls in the MIDI Remote Mapping Assistant on page 719
Quick Control Focus Setup Panel on page 720
VST Instrument Control Panel on page 665
Effect Control Panel on page 423
Quick Control Focus on page 697

MIDI Remote Manager Window

The **MIDI Remote Manager** window displays information about the connected MIDI controllers and the installed scripts.

To open the **MIDI Remote Manager** window, do one of the following:

- In the **MIDI Controller** section of the **MIDI Remote** info line, click **Open MIDI Remote Manager**.
- Select **Studio** > **MIDI Remote Manager**.



MIDI Controllers

The **MIDI Controllers** tab lists all MIDI controllers, the ones that are currently connected and active, but also the ones which have been active before. To sort the list by a specific attribute, click the corresponding column header. Select a controller from the list to display its information in the bottom part of the window.

Scripts

The **Scripts** tab lists all scripts that are installed by the names of the corresponding controllers. To sort the list by a specific attribute, click the corresponding column header. Select a controller name from the list to display information about the script in the bottom part of the window.

Add Surface

Opens the **Add MIDI Controller Surface** dialog, which allows you to add a new MIDI controller surface for a MIDI controller that has no script.

Import Script

Allows you to import MIDI controller scripts.

Search

The search field allows you to search for specific controllers and scripts on the **MIDI Controllers** tab and on the **Scripts** tab by typing in their name.

Reload Scripts

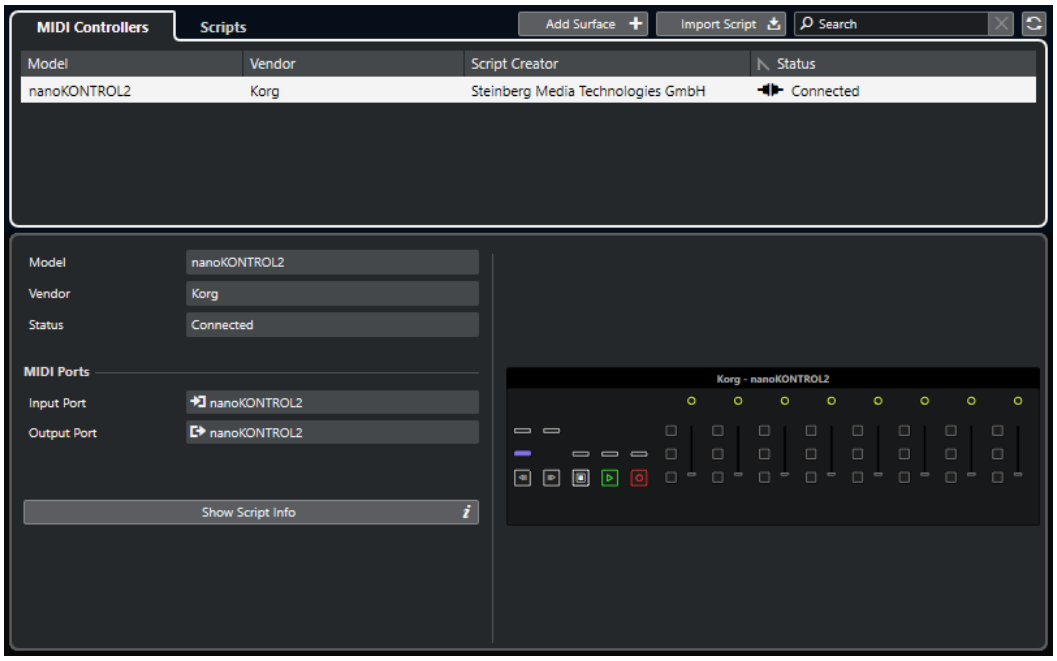
Allows you to reload the scripts.

RELATED LINKS
MIDI Remote Info Line on page 695
MIDI Controller Surface Editor on page 706
Deleting Unused MIDI Controller Scripts on page 726
Add MIDI Controller Surface Dialog on page 704
MIDI Remote Manager - MIDI Controllers Tab on page 722
MIDI Remote Manager - Scripts Tab on page 724
Importing MIDI Controller Surface Scripts on page 701

MIDI Remote Manager - MIDI Controllers Tab

The **MIDI Controllers** tab of the **MIDI Remote Manager** window displays information about the connected MIDI controllers.

To show information for a specific MIDI controller, select it from the MIDI controllers list in the upper part of the **MIDI Remote Manager** window.



Model

The model of the selected MIDI controller.

Vendor

The vendor of the selected MIDI controller.

Status

The status of the selected MIDI controller.

Input Port

Shows the MIDI input port of your MIDI controller.

Output Port

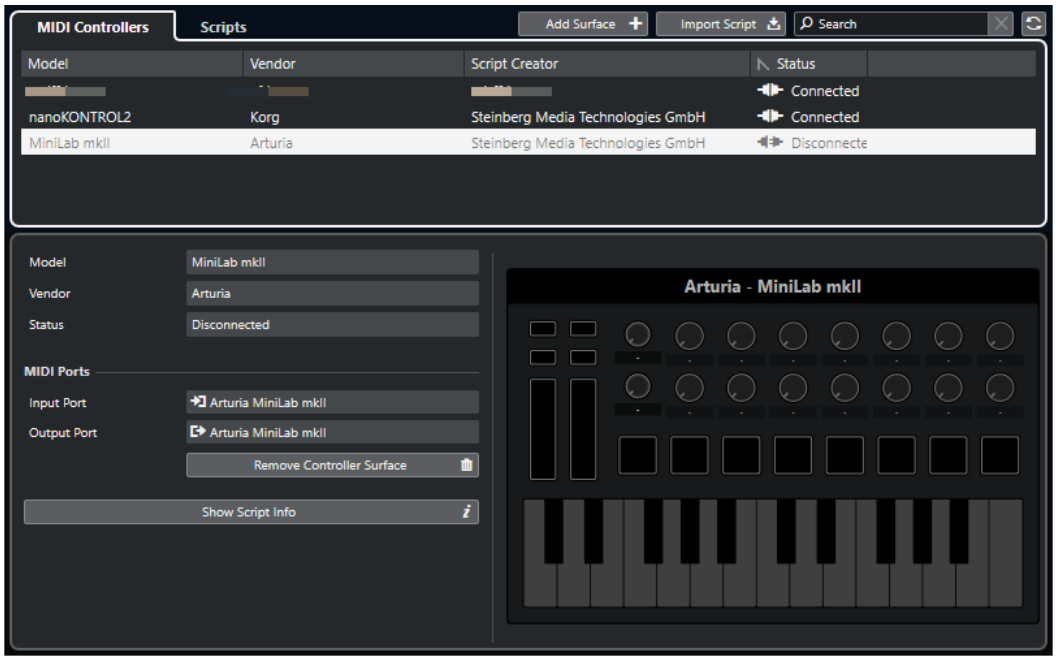
Shows the MIDI output port of your MIDI controller.

Show Script Info

Opens the **Scripts** tab for the selected MIDI controller.

Remove Controller Surface

Removes the selected controller surface.



NOTE

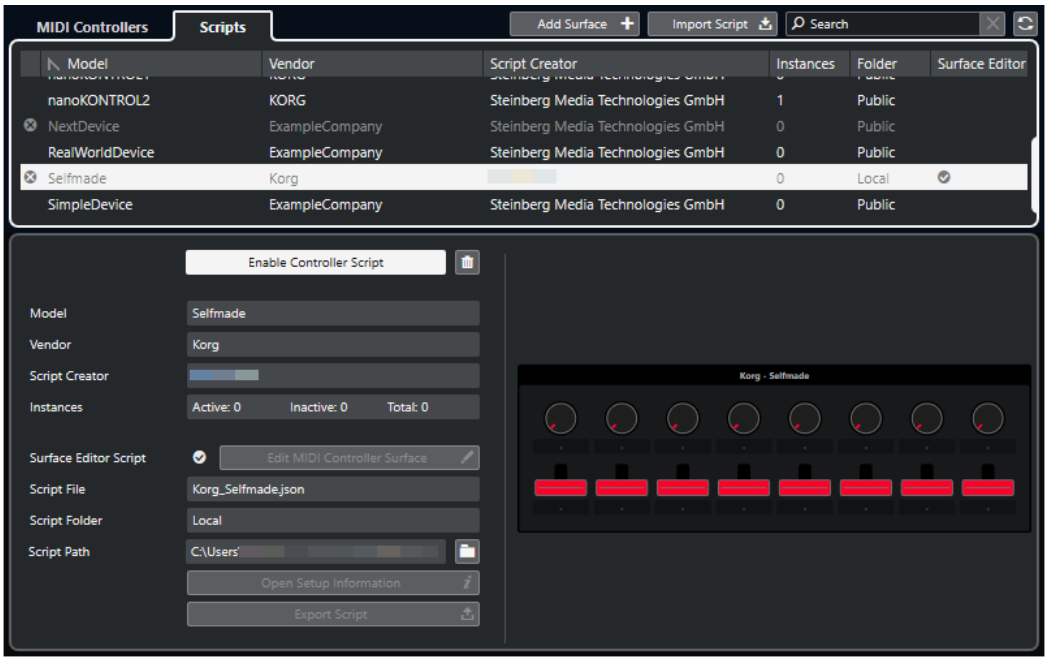
This is only available for controller surfaces that are currently disconnected.

RELATED LINKS
MIDI Remote Manager Window on page 721
MIDI Controller Surface Editor on page 706
MIDI Remote Manager - Scripts Tab on page 724
MIDI Controller Settings Pane on page 712

MIDI Remote Manager - Scripts Tab

The **Scripts** tab of the **MIDI Remote Manager** window displays script information for the connected MIDI controllers.

To show script information for a specific MIDI controller, select the MIDI controller from the MIDI controllers list in the upper part of the **MIDI Remote Manager** window.



Disable Controller Script/Enable Controller Script

Disables/enables the selected controller script.

Delete Script

Deletes the selected controller script.

Model

The model of the selected MIDI controller.

Vendor

The vendor of the selected MIDI controller.

Script Creator

The script creator of the selected MIDI controller.

Instances

The number of instances of the selected MIDI controller.

Surface Editor Script

If the selected MIDI controller script was created with the **MIDI Controller Surface Editor**, this is indicated by a checkmark. Click **Edit MIDI Controller Surface** to open the **MIDI Controller Surface Editor**.

Script File

The file name of the script.

Script Folder

The name of the folder where the script is located.

Script Path

The file path to the script file.

Open Script Folder

Opens the folder where the script is located.

Open Setup Information

Opens setup information for the selected MIDI controller. This is only available for particular MIDI controllers that require specific settings to communicate with Cubase.

Export Script

Opens a file dialog that allows you to export the selected script.

RELATED LINKS
MIDI Controller Surface Editor on page 706
Deleting Unused MIDI Controller Scripts on page 726

Deleting Unused MIDI Controller Scripts

You can delete MIDI controller scripts that you no longer need. However, you can only delete scripts that you have created by adding your own MIDI controller surfaces.

PROCEDURE

1. On the **MIDI Remote** info line, click **Open MIDI Remote Manager**.
2. Open the **Scripts** tab.
3. From the table, select the script that you want to delete.
4. Click **Delete Script**.

   NOTE

   Delete Script is available for user scripts only. To disable public scripts, click **Disable Controller Script** instead.

RESULT

The script folder is moved to trash, and the controller surface is removed from the MIDI controllers overview.

RELATED LINKS
Adding MIDI Controller Surfaces on page 700
MIDI Remote Manager Window on page 721
MIDI Controller Settings Pane on page 712

Disabling Controller Scripts

You can disable controller scripts. This is useful if you want to use a custom script for a MIDI controller with a public controller script assigned to it, for example.

PROCEDURE

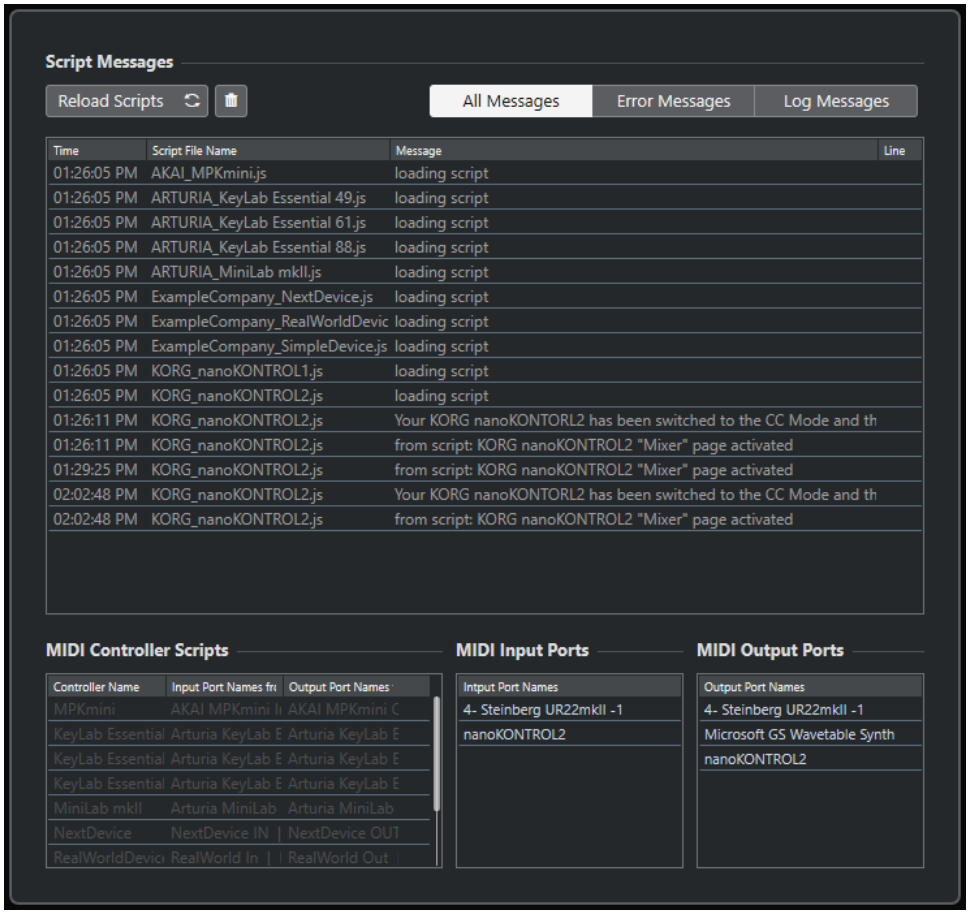
1. On the **MIDI Remote** info line, click **Open MIDI Remote Manager**.
2. Open the **Scripts** tab.
3. Select the public script that you want to disable, and click **Disable Controller Script**.
4. Select the custom script that you want to enable instead, and click **Enable Controller Script**.

RELATED LINKS
Adding MIDI Controller Surfaces on page 700
MIDI Remote Manager Window on page 721
MIDI Controller Settings Pane on page 712

MIDI Remote Script Console

The **MIDI Remote Console** displays script messages.

Right-click the **MIDI Remote** info line and activate **Scripting Tools**. Click **Open MIDI Remote Script Console** to open the **MIDI Remote Script Console**.



Reload Scripts

Allows you to reload the scripts that are displayed in the **MIDI Remote Script Console**.

Clear All Messages

Clears all messages from the message display.

All Messages

Shows all messages in the message display.

Error Messages

Shows error messages in the message display.

Log Messages

Shows log messages in the message display.

MIDI Controller Scripts

Shows information about the available MIDI controller scripts.

MIDI Input Ports

Shows information about the currently used MIDI input ports.

MIDI Output Ports

Shows information about the currently used MIDI output ports.

MIDI Remote API

The application programming interface **MIDI Remote API** allows you to develop a script, that is, a device driver for dedicated MIDI controllers.

Scripts describe the layout and the order of the controls of a specific MIDI controller. They include factory mappings to Cubase parameters.

Cubase comes with scripts for a number of MIDI controllers. If you connect one of these controllers, it is automatically detected and displayed on the **MIDI Remote** tab.

If no script is available for your controller, we encourage you to write one. Refer to the description in the **MIDI Remote API - Programmer's Guide**.

TIP

To access the **MIDI Remote API - Programmer's Guide**, right-click the info line on the **MIDI Remote** tab, activate the **Scripting Tools**, and click **Open MIDI Remote API - Programmer's Guide**.

NOTE

If you do not have any programming skills, you can use the **MIDI Controller Surface Editor** to create a surface editor script for your MIDI controller.

RELATED LINKS

Scripting Tools on page 698
MIDI Controller Surface Editor on page 706

Remote-Controlling Cubase

You can control Cubase with a connected MIDI device via MIDI.

The supported devices are described in the separate document **Remote Control Devices**. You can also use a generic MIDI controller to remote-control Cubase.

NOTE

Most remote control devices are able to control both MIDI and audio channels in Cubase, but the parameter setup may be different. Audio-specific controls, such as EQ, are disregarded when controlling MIDI channels.

RELATED LINKS

Generic Remote Page (Legacy) on page 742

Connecting Remote Devices

You can connect your remote device via USB or via MIDI.

PROCEDURE

- Do one of the following:
  - If your remote device provides a USB MIDI port, use a USB cable to connect it to the USB port of your computer.
  - If your remote device provides a MIDI output, use a MIDI cable to connect it to a MIDI input on your MIDI interface.

    NOTE

    If the remote device features indicators, motorized faders, or other feedback devices, connect a MIDI Out on the interface to a MIDI In on the remote device.

RELATED LINKS

MIDI Connections on page 24

Removing the Remote Input from All MIDI Inputs

To avoid that you accidentally record data from the remote device when you record MIDI, remove the remote input from **All MIDI Inputs**.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Remote Devices** list, select **MIDI Port Setup**.
3. In the table on the right, deactivate **In 'All MIDI Inputs'** for the MIDI input to which you have connected the MIDI remote device.

   The **State** column reads **Inactive**.

4. Click **OK**.

RESULT

The remote unit input is removed from the **All MIDI Inputs** group.

RELATED LINKS

MIDI Port Setup Page on page 25

Setting up Remote Devices

PROCEDURE

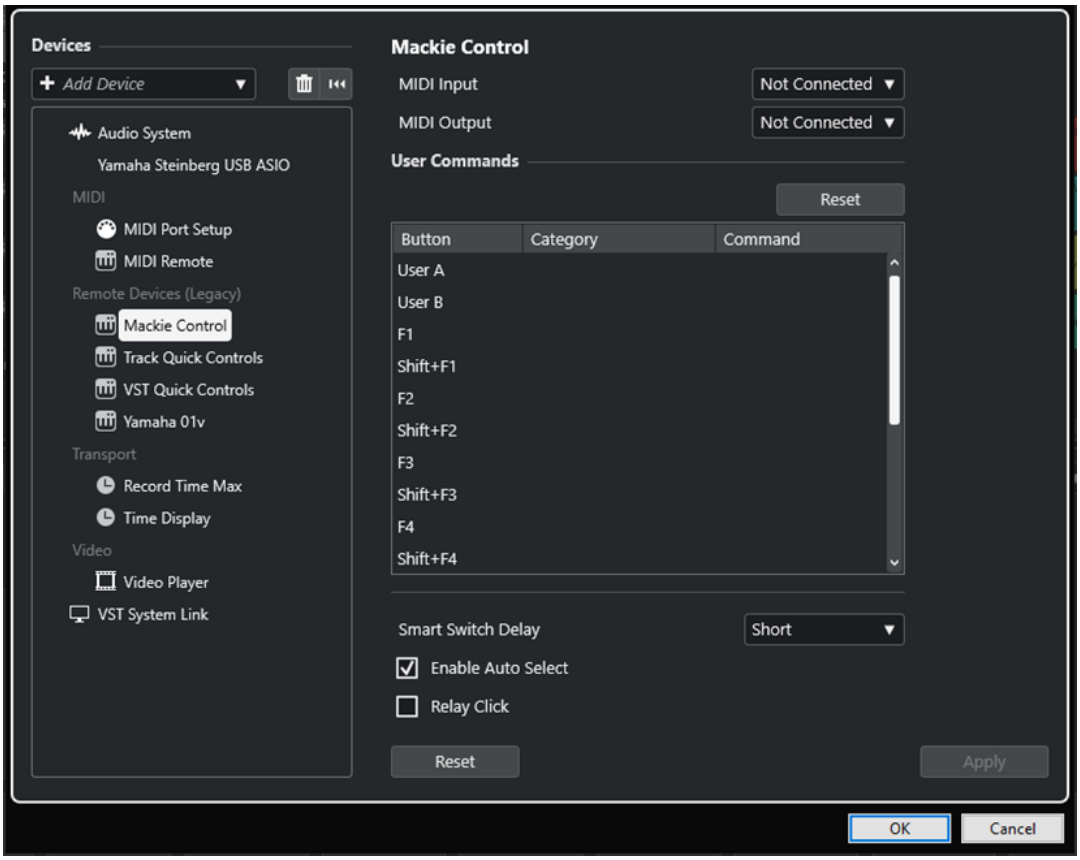
1. Select **Studio** > **Studio Setup**.
2. Click **Add Device** in the top left corner, and select a remote device from the pop-up menu to add it to the **Remote Devices** category.

   NOTE

   If your device is not available in the pop-up menu, select **Generic Remote**.

3. In the **Remote Devices** category, select the device.

   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.



4. Open the **MIDI Input** pop-up menu, and select a MIDI input.
5. Optional: Open the **MIDI Output** pop-up menu, and select a MIDI output.

6. Click **OK**.

RESULT

You can now use the MIDI device to control Cubase functions.

A bright stripe in the **Project** window and in the **MixConsole** indicates the channels that are linked to the remote control device.

You can open a panel for the added device by selecting **Studio** > **More Options**.

AFTER COMPLETING THIS TASK

Depending on your external MIDI control device, you might need to configure the parameters.

Resetting Remote Devices

You can reset remote devices. This is necessary if the communication between Cubase and a remote device is interrupted or if the handshaking protocol fails to establish the connection.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Remote Devices** list, select the remote device.
3. Click **Reset** in the lower part of the **Studio Setup** dialog to reset the selected remote device.

   NOTE

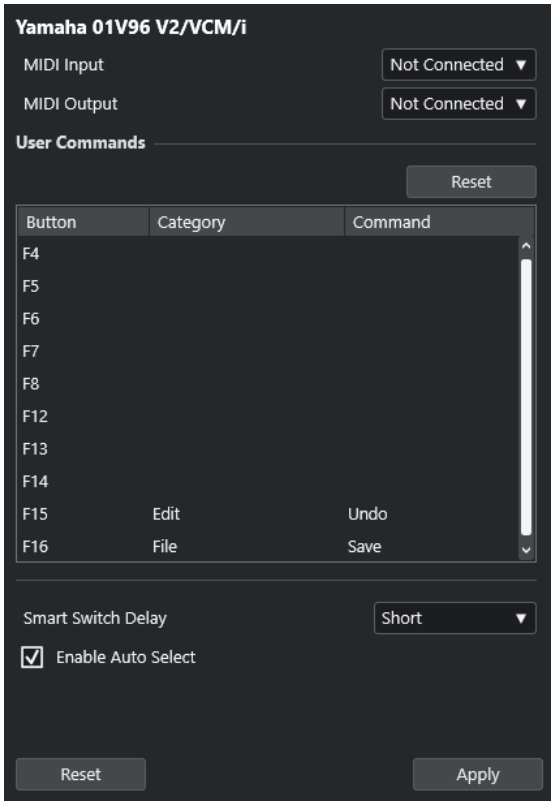
   To reset all devices in the **Remote Devices** list, click **Reset All Devices** in the top left of the dialog.

RELATED LINKS

Studio Setup Dialog on page 14

Global Options for Remote Controllers

On the page for your remote device, global functions may be available.



MIDI Input

Allows you to select a MIDI input.

MIDI Output

Allows you to select a MIDI output.

User Commands

Lists the controls or buttons of your remote device.

Smart Switch Delay

Allows you to specify a delay for the smart switch function. Functions that support the smart switch behavior are activated for as long as the button is pressed.

Enable Auto Select

For touch-sensitive remote control devices, this automatically selects a channel when you touch a fader. For devices without touch-sensitive faders, the channel is selected as soon as you move the fader.

Remote Devices and Automation

You can write automation via remote devices.

If your remote device does not have touch-sensitive controls and you want to replace existing automation data in **Write** mode, consider the following:

- Make sure that you move only the controller that you want to replace.
- Stop playback to deactivate **Write** mode.

As a result, all data for the corresponding parameter is replaced, from the position where you moved the control up to the position where you stop playback.

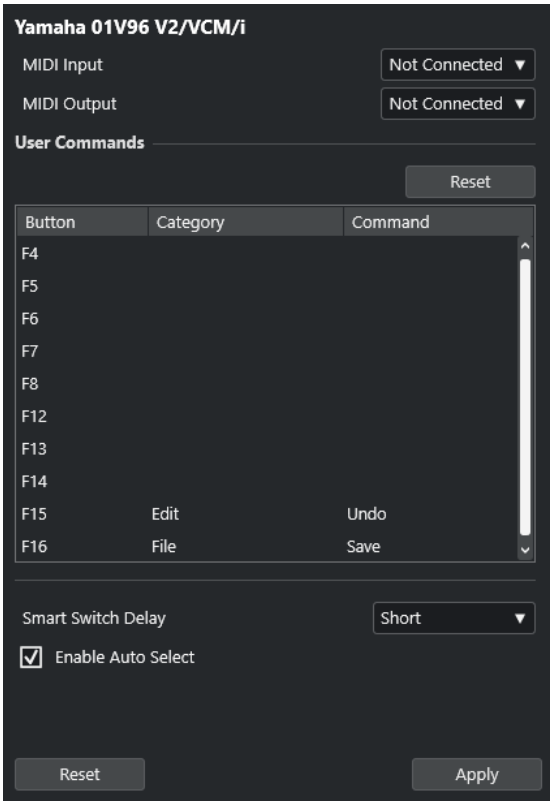
Assigning Commands to Remote Devices

You can assign any Cubase command to which a key command can be assigned to remote devices.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Remote Devices** list, select your remote device.

   In the **User Commands** section, the controls or buttons of your remote device are listed in the **Button** column.



3. Click in the **Category** column for the control to which you want to assign a Cubase command, and select the category from the pop-up menu.
4. Click in the **Command** column, and select the Cubase command from the pop-up menu.

   The available items on the pop-up menu depend on the selected category.
5. Click **Apply**.

RESULT

The selected function is assigned to the button or control on the remote device.

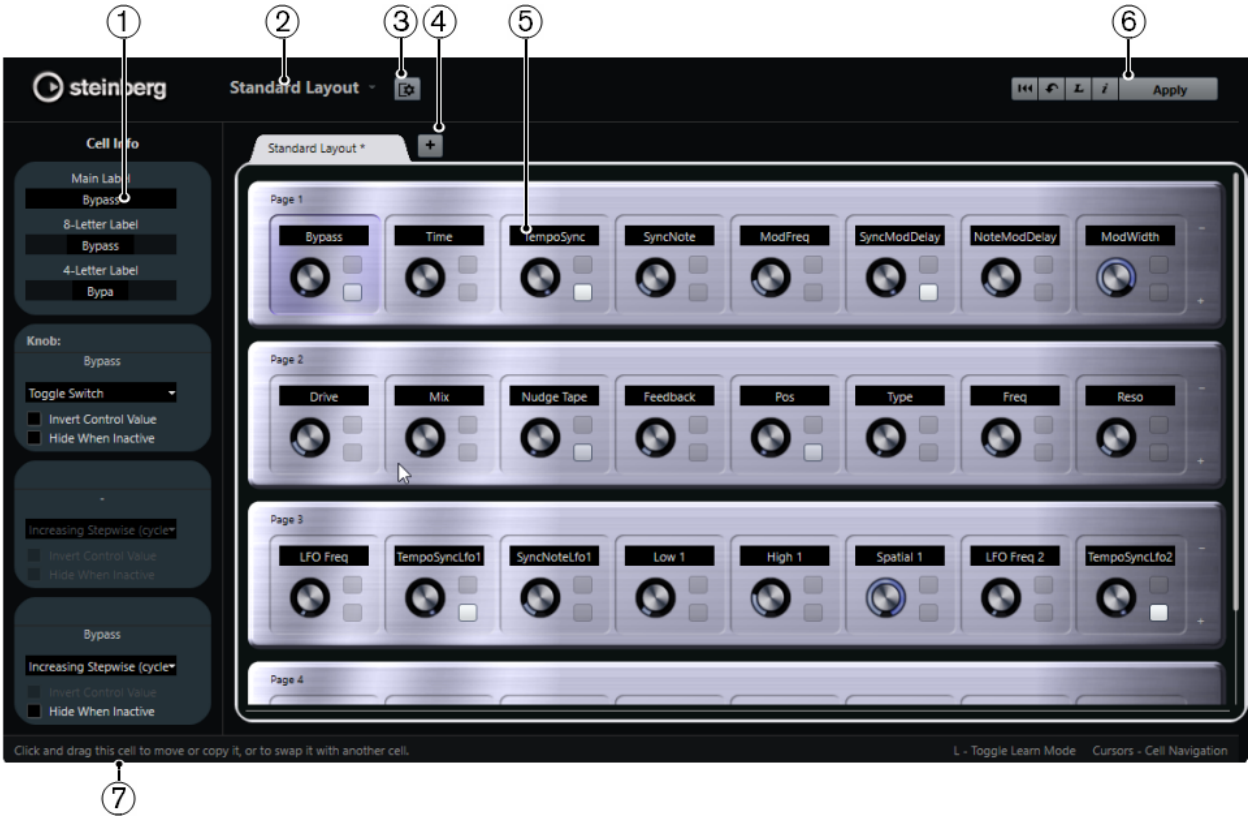
RELATED LINKS

Key Commands on page 1094

Remote Control Editor

The **Remote Control Editor** allows you to define your own mapping of VST plug-in parameters to the controls of the supported hardware controllers. This is useful if you think that the automatic mapping of plug-in parameters to remote control devices is not intuitive enough.

- 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**.



1 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.

2 Layout Selection

Shows the name of the layout. Click to select a different layout.

3 Set up Cell Layout

Opens the **Cell Layout Configuration**, where you can specify the number of cells per page and select the switch layout for the pages. To specify the number of switches for a cell, activate/deactivate them.

4 Add New Hardware Layout

Adds a new layout for a particular hardware type. To remove a hardware layout, click its **Close** button.

5 Layout section

Displays layouts that represent the hardware devices that are used to remote-control the plug-in parameters. Here, you can change the parameter assignments, the name in the text label, the cell setup, and the order of cells and pages.

6 Toolbar

Shows tools for setting up the layout.

7 **Status Bar**

Shows information about an element when you position the mouse pointer over it in the editor window.

RELATED LINKS
Remote Control Editor Toolbar on page 735

Remote Control Editor Toolbar

Shows tools for setting up the layout.

Remove All Assignments

Removes all parameter assignments.

Get Default Factory Layout/Copy Layout from Other Tab

Reverts to the default settings for the current layout or copies the settings of one layout page to another.

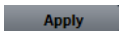
Activate/Deactivate Learn Mode

Activates/Deactivates **Learn** mode for the **Remote Control Editor**.

Activate/Deactivate Assignment Inspection View

Shows the current assignment of all cells in a layout.

Apply Current Layout



Saves the settings. If the hardware supports this function, the changes are immediately reflected on the hardware controllers.

Control Settings

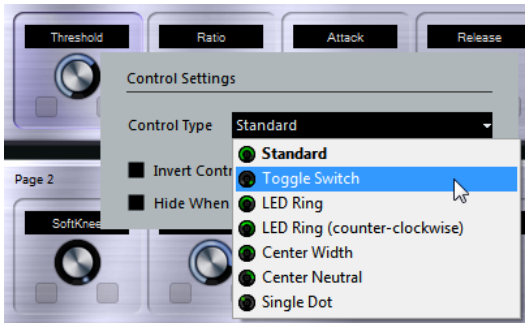
You can define the control style for switches or knobs to which you have assigned a function. This includes the LED ring or changing its behavior from continuous value representation to on/off, for example.

To open the **Control Settings** panel, right-click the control.

NOTE

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 an undefined LED style.

Toggle Switch

A knob with 2 states.

LED Ring

An LED ring around the knob. The setting increases clockwise.

LED Ring (counter-clockwise)

An LED ring around the knob. The setting increases counter-clockwise.

Center Width

An LED ring that starts at the top center position. When the settings increase, an LED is shown, which is growing in both directions.

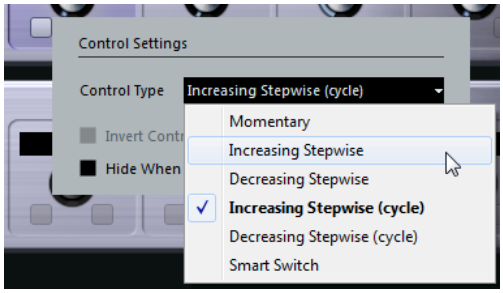
Center Neutral

A dial that starts at the top center position and can be moved left or right, like a pan control, for example.

Single Dot

An LED ring around the knob. The setting increases clockwise, with a dot indicating the current value.

Control Type Settings for Switches



The following options are available for switches:

Momentary

Activates the assigned function for as long as you hold the switch.

Increasing Stepwise

Steps through the available settings until the maximum is reached.

Decreasing Stepwise

Steps through the available settings in reverse order until the minimum is reached.

Increasing Stepwise (cycle)

Steps through the available settings, starting over with the minimum value when the maximum is reached.

Decreasing Stepwise (cycle)

Steps through the available settings in reverse order, starting over with the maximum value when the minimum is reached.

Smart Switch

Switches between 2 states every time you press the switch. Enters **Momentary** mode if you hold the switch.

Invert Control Value

Inverts the control state/value.

Hide When Inactive

Hides plug-in parameters when they are inactive or disabled.

Assigning Parameters to Controls

PROCEDURE

1. On the **Remote Control Editor** toolbar, click **Activate/Deactivate Learn Mode**.
2. Select the control that you want to assign to a plug-in parameter.
3. Do one of the following:
   - Click a parameter on the plug-in panel.
   - Double-click on a control in the **Remote Control Editor**, and select a parameter from the list of available plug-in parameters.
4. Press **Esc** to end **Learn** mode.

RESULT

The parameter is assigned to the control.

NOTE

To remove the parameter assignment for a cell, activate **Learn** mode, select the cell, and press **Delete** or **Backspace**.

RELATED LINKS

Remote Control Editor Toolbar on page 735

Editing the Layout

In the layout section, you can perform a number of editing operations and arrange the pages to your liking.

- To navigate from cell to cell, use the cursor keys.

- To step through the controls within the cells in **Learn** mode, press **Shift**, and use the cursor keys.
- To step through the different layouts, use **Tab** and **Shift**-**Tab**.
- 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.

- To add a page to a layout, click **Add New Page**.

- To remove a page, click **Remove Current Page**.
- To specify the label for a cell, use the top 3 text fields in the **Inspector**.

  The first text field displays 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.

  NOTE

  This is useful if your hardware devices have value fields that only display a limited number of characters.

Joysticks

You can use a joystick to remote-control panning operations in Cubase. This can be useful for creating smooth automation curves, for example.

- To use a joystick for remote-controlling, connect it to your computer, and restart Cubase.

  After restarting the application, the joystick is automatically activated.

Deactivating Joysticks

If you have connected a joystick to your system, but do not want to use it with Cubase, you can deactivate it.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Remote Devices** list, select the joystick device.

   The available device settings are shown to the right.
3. Deactivate the respective option.

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.

To show the **Track Quick Controls** for a specific track, select the track from the track list, and, in the **Inspector**, open the **QC** section.

RELATED LINKS
Track Quick Controls on page 688
Using Supported MIDI Controllers with MIDI Remote on page 698
Setting up Focus Quick Controls in the MIDI Remote Mapping Assistant on page 719
Setting up Track Quick Controls with Remote Controllers (Legacy) on page 739

Setting up Track Quick Controls with Remote Controllers (Legacy)

Track Quick Controls become particularly powerful if you use them in conjunction with a remote controller.

We recommend to set up **Track Quick Controls** in the **MIDI Remote Mapping Assistant** and to use the **Studio Setup** dialog only in case you already used **Track Quick Controls** with an earlier version of Cubase.

PREREQUISITE

The MIDI output on your remote device is connected to a MIDI input on your MIDI interface.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Remote Devices** list, select **Track Quick Controls**.
3. Open the **MIDI Input** pop-up menu, and select a MIDI input.
4. Optional: Open the **MIDI Output** pop-up menu, and select a MIDI output.
5. Click **Apply**.
6. Activate **Learn**.
7. In the **Control Name** column, select **QuickControl 1**.
8. On your MIDI device, move the control that you want to connect with the first quick control.
9. Select the next slot in the **Control Name** column, and repeat the previous steps.
10. Click **OK**.

RESULT

The **Track Quick Controls** are now connected with control elements on your MIDI device. If you move a control element, the value of the parameter that is assigned to the corresponding **Track Quick Controls** changes accordingly.

NOTE

The remote controller setup for **Track Quick Controls** is saved globally, that is, it is independent of any projects.

RELATED LINKS
Generic Remote Page (Legacy) on page 742
Setting up Focus Quick Controls in the MIDI Remote Mapping Assistant on page 719

Activating Pick-up Mode for Hardware Controls (Legacy)

Pick-up Mode allows you to change configured **Quick Control** parameters without accidentally modifying the previous values. This is useful if you want the control to pick up the parameter at the value to which it was last set. If you move a hardware control, the parameter only changes when the control reaches the previous value.

NOTE

This only applies to hardware controllers whose controls use specific ranges.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Remote Devices** list, select **Track Quick Controls** or **VST Quick Controls**.
3. Activate **Pick-up Mode**.
4. Click **OK**.

VST Quick Controls

If you have an external remote control device, you can control up to 8 parameters of a VST instrument via the **VST Quick Controls** feature in Cubase.

RELATED LINKS
VST Instrument Control Panel on page 665
Effect Control Panel on page 423
Using Supported MIDI Controllers with MIDI Remote on page 698
Setting up Focus Quick Controls in the MIDI Remote Mapping Assistant on page 719
Setting up Track Quick Controls with Remote Controllers (Legacy) on page 739
VST Quick Controls in the VSTi Rack (Legacy) on page 740

VST Quick Controls in the VSTi Rack (Legacy)

VST Quick Controls allow you to remote-control a VST instrument from within the **VSTi** rack.

To show the **VST Quick Controls** on the **VSTi** rack, 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 displayed 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.

Setting up VST Quick Controls with Remote Controllers (Legacy)

VST Quick Controls become particularly powerful if you use them in conjunction with a remote controller.

We recommend to set up **VST Quick Controls** in the **MIDI Remote Mapping Assistant** and to use the **Studio Setup** dialog only in case you already used **VST Quick Controls** with an earlier version of Cubase.

PREREQUISITE

The MIDI output on your remote device is connected to a MIDI input on your MIDI interface.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Remote Devices** list, select **VST Quick Controls**.
3. Open the **MIDI Input** pop-up menu, and select a MIDI input.
4. Optional: Open the **MIDI Output** pop-up menu, and select a MIDI output.
5. Click **Apply**.
6. Activate **Learn**.
7. In the **Control Name** column, select **QuickControl 1**.
8. On your MIDI device, move the control that you want to connect with the first quick control.
9. Select the next slot in the **Control Name** column, and repeat the previous steps.
10. Click **OK**.

RESULT

The **VST Quick Controls** are now connected with control elements on your MIDI device. If you move a control element, the value of the parameter that is assigned to the corresponding **VST Quick Controls** changes accordingly.

NOTE

The remote controller setup for **VST Quick Controls** is saved globally, that is, it is independent of any projects.

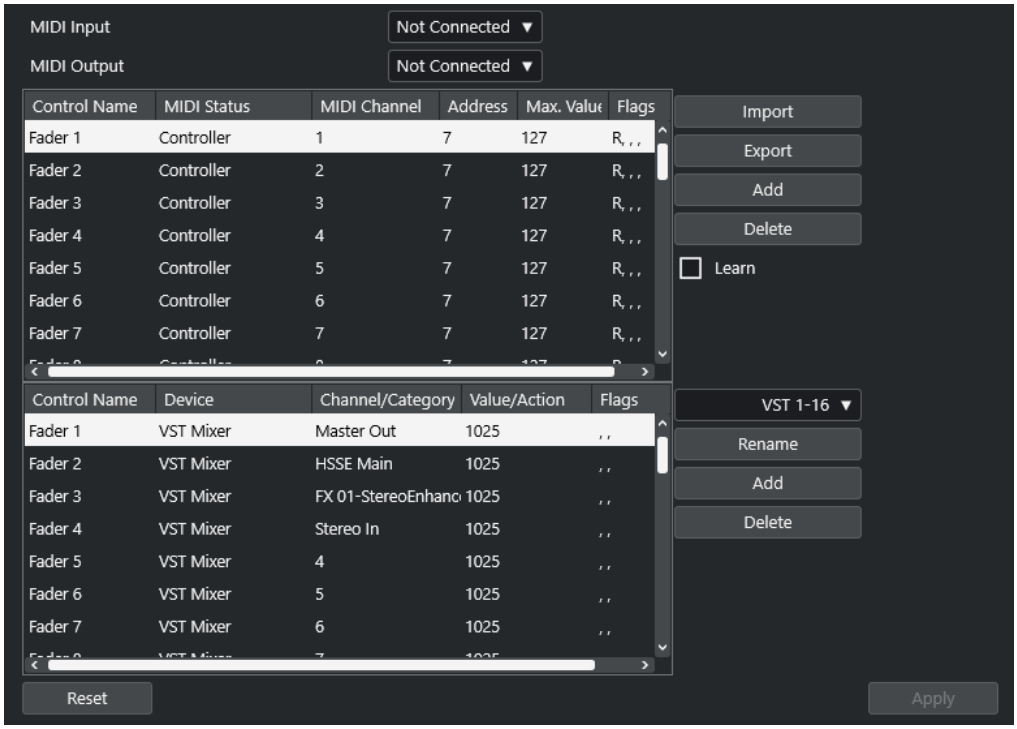
RELATED LINKS

Setting up Focus Quick Controls in the MIDI Remote Mapping Assistant on page 719
Generic Remote Page (Legacy) on page 742
VST Instrument Control Panel on page 665

Generic Remote Page (Legacy)

You can use a generic MIDI controller to remote-control almost any function in Cubase. After setting up the **Generic Remote** device, you can control the specified parameters via the MIDI remote device.

- To open the **Generic Remote** page, select **Studio** > **Studio Setup**, and, from the **Remote Devices** list, select **Generic Remote**.



The following options are available:

MIDI Input

Allows you to select the MIDI input port to which your remote device is connected.

MIDI Output

Allows you to select the MIDI output port to which your remote device is connected.

MIDI Remote Control Configuration

The upper table shows the MIDI remote control configuration of your remote device.

Cubase Control Assignment

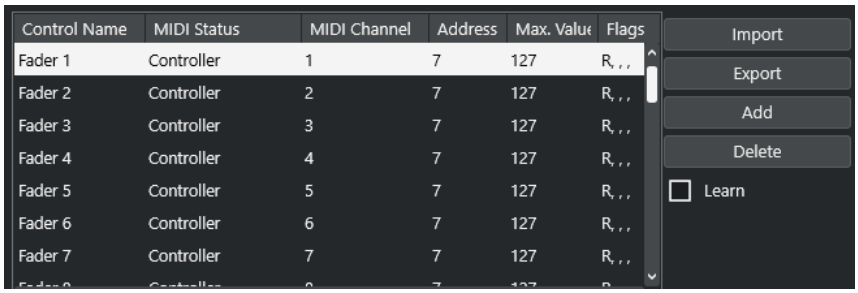
The lower table allows you to assign Cubase controls to your remote device.

RELATED LINKS
MIDI Remote Control Configuration Section on page 742
Cubase Control Assignment Section on page 744

MIDI Remote Control Configuration Section

The MIDI remote control configuration section is displayed in the upper table of the **Generic Remote** setup page.

- To open the **Generic Remote** settings, select **Studio** > **Studio Setup**, and, from the **Remote Devices** list, select **Generic Remote**.



The following options are available in the upper table:

Control Name

Double-click this field to change the name of the control and to enter the name written on the console, for example. This name change is automatically reflected in the lower table.

MIDI Status

Allows you to specify the type of MIDI message sent by the control.

MIDI Channel

Allows you to select the MIDI channel on which the controller is transmitted.

Address

Allows you to specify the continuous controller number, the pitch of a note, or the address of an NRPN/RPN continuous controller.

Max. Value

Allows you to specify the maximum value that the control transmits. 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

Allows you to select one of the following flags:

- **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.

- **Pick-up**

  Activate this if you want the control to pick up the parameter at the value to which it was last set.

The buttons and the options to the right of the table have the following functions:

Import

Allows you to import saved remote setup files.

Export

Allows you to export the current setup with the file extension **.xml**.

Add

Adds controls to the bottom of the table.

Delete

Deletes the selected control from the table.

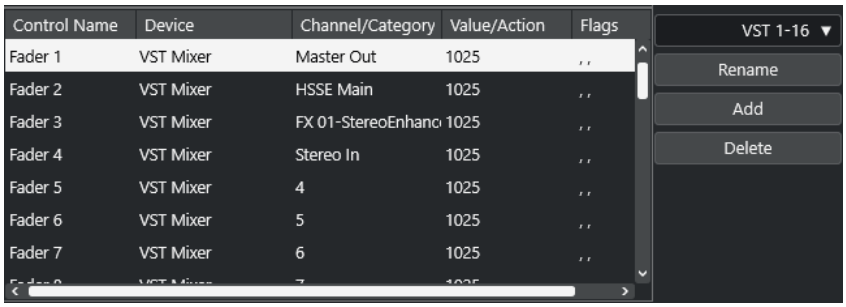
Learn

Allows you to assign MIDI messages by learning.

Cubase Control Assignment Section

You can specify the Cubase control assignment section in the lower table of the **Generic Remote** setup page. Each row in the table is assigned to the controller in the corresponding row of the MIDI remote-control configuration table.

- To open the **Generic Remote** settings, select **Studio** > **Studio Setup**, and, from the **Remote Devices** list, select **Generic Remote**.



The following options are available:

Control Name

Reflects the control name selected in the upper table.

Device

Allows you to select the Cubase device that you want to control.

Channel/Category

Allows you to select the channel or the command category that you want to control.

Value/Action

Allows you to select the parameter of the channel that you want to control. If the **Command** device is selected, this is where you specify the **Action** of the category.

Flags

Allows you to select one of the following flags:

- **Push Button**

  Activate this if the parameter should only be changed if the received MIDI message shows a value unequal to 0.

- **Toggle**

  Activate this if the parameter value should be switched between minimum and maximum value, each time a MIDI message is received.

  You can combine **Push Button** and **Toggle** for remote controls which do not latch the state of a button. This is useful to control the mute status with a device on which pressing the mute button turns it on, and releasing the mute button turns it off.

- **Not Automated**

  Activate this if you do not want the parameter value to be automated.

The buttons to the right of the table have the following functions:

Bank pop-up menu

Allows you to switch banks. This is necessary if your MIDI control device has 16 volume faders and you are using 32 **MixConsole** channels in Cubase, for example.

Rename

Allows you to rename the selected bank.

Add

Adds banks to the pop-up menu.

Delete

Deletes the selected bank from the pop-up menu.

RELATED LINKS
Assignable Devices and Functions on page 745

Assignable Devices and Functions

The **Device** column in the Cubase control assignment section lists the Cubase devices that you can control.

Command

Allows you to assign Cubase commands to which a key command can be assigned. If you select **Add Track** in the **Channel/Category** column and **Audio** in the **Value/Action** column, you can add audio tracks via your MIDI device, for example.

VST Quick Controls Manager

Allows you to assign **VST Quick Controls**. If you select **Device** in the **Channel/Category** column and one of the **Quick Control** options in the **Value/Action** column, you can control the **VST quick control** via your MIDI device.

Midi Mixer

Allows you to control the functions of the **Midi Mixer** panel. If you select **Device** in the **Channel/Category** column and one of the options in the **Value/Action** column, you can control the function via your MIDI device.

MMC Master

Allows you to control the functions of the **MMC Master** panel. If you select **Device** in the **Channel/Category** column and one of the options in the **Value/Action** column, you can control the function via your MIDI device.

Mixer

Allows you to control **MixConsole** functions. If you select one of the available channels or **Selected** in the **Channel/Category** column and one of the options in the **Value/Action** column, you can control the function of that specific channel or of the selected channel via your MIDI device.

Transport

Allows you to control the transport functions. If you select **Device** in the **Channel/Category** column and one of the options in the **Value/Action** column, you can control the function via your MIDI device.

Metronome

Allows you to control metronome functions. If you select **Device** in the **Channel/Category** column and one of the options in the **Value/Action** column, you can control the function via your MIDI device.

VST Mixer

Allows you to control **MixConsole** functions. If you select one of the available channels or **Selected** in the **Channel/Category** column and one of the options in the **Value/Action** column, you can control the function of that specific channel or of the selected channel via your MIDI device.

NOTE

You can also control all **VST Instruments** that you added in the **Project** window and that are listed in the **Device** column.

Assigning MIDI Messages in Learn Mode

You can assign MIDI messages in **Learn** mode.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Remote Devices** list, select **Generic Remote**.
3. Activate **Learn**.
4. Select the control in the upper table, and move the corresponding control on your MIDI device.

RESULT

The values for **MIDI Status**, **MIDI Channel**, and **Address** are automatically set to those of the moved control.

NOTE

If you use the **Learn** function for a control that sends a program change value, **Prog. Change Trigger** is automatically selected in 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 produce the expected results, try using the **Prog. Change** value instead.

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 real time:

- MIDI track parameters
- MIDI modifiers
- MIDI effects
- **Transpose** and **Velocity** on the info line

NOTE

To convert the track settings to real MIDI events, select **MIDI** > **Freeze MIDI Modifiers** or **MIDI** > **Merge MIDI in Loop**.

RELATED LINKS

Merging MIDI Events into a New Part on page 768

MIDI Track Parameters

The MIDI track parameters are located in the topmost **Inspector** section and in the **Routing** section for MIDI and instrument tracks.

These settings either affect the basic functionality of 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 real time:

- MIDI Volume
- MIDI Pan
- Track Delay
- Input Transformer

RELATED LINKS

Basics Section for MIDI Tracks on page 137
Track Input Transformer on page 748

Track Input Transformer

The **Track Input Transformer** allows you to filter and change MIDI data coming to a MIDI track before it is recorded.

Use the **Track Input Transformer** for the following purposes:

- To set up split keyboard combinations for recording left and right hands separately.
- To convert a controller, such as a foot pedal, into MIDI notes (for playing bass drum the right way).
- To filter a specific type of MIDI data on one MIDI channel only.
- To turn aftertouch into any controller and vice versa.
- To invert velocity or pitch.

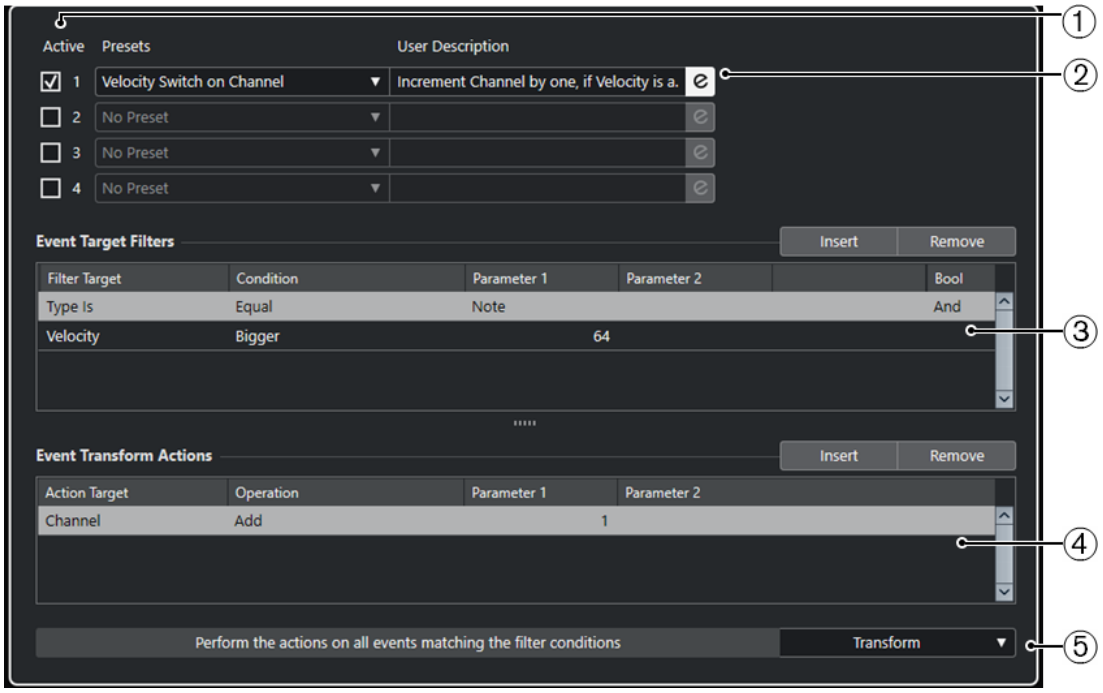
NOTE

If you want to make global filter settings and apply them on several MIDI tracks, use the **Project Input Transformer** instead.

RELATED LINKS
Project Input Transformer on page 993

Track Input Transformer Window Overview

- To open the **Track Input Transformer**, select a MIDI track, and, in the **Routing** section of the **Inspector**, open the **Input Transformer** pop-up menu, and activate **Track**. Open the **Input Transformer** pop-up menu again, and select **Open Panel**.



The **Track Input Transformer** window contains the following parameters:

1 Module

Allows you to view and edit a module.

2 Preset

Allows you to select a preset.

3 **Event Target Filters**

Allows you to specify the conditions, such as type, attribute, value, or position, that a specific element must meet to be found. You can combine any number of filter conditions using **And** and **Or** operators.

4 **Event Transform Actions**

Allows you to set up a list of actions that specifies exactly what is done. This is not necessary for all functions.

5 **Functions**

Allows you to select a function.

NOTE

You can resize the **Event Target Filters** and the **Event Transform Actions** sections by dragging the divider between them.

RELATED LINKS

Project Input Transformer Window Overview on page 993

Setting up Track Input Transformer Filter Lines

PREREQUISITE

You have opened the **Track Input Transformer**.

PROCEDURE

1. Activate the **Module** option.
2. Click **Edit** to open the **Event Target Filters** and the **Event Transform Actions** sections.
3. In the **Event Target Filters** section, click **Insert**.
   A filter line is added to the list.
4. Click in the **Filter Target** column, and select an option from the pop-up menu.
5. Click in the **Condition** column, and select an option from the pop-up menu.
6. Click in the **Parameter 1** column, and enter a value.

   NOTE

   Some **Condition** options also require a value for **Parameter 2**.

RESULT

The settings affect all MIDI events that you record on the track.

AFTER COMPLETING THIS TASK

Open the **Functions** pop-up menu, and select a function.

Set up an action line in the **Event Transform Actions** section.

In the **Inspector**, click **Input Transformer**, and select **None**. Otherwise, the **Track Input Transformer** remains active.

RELATED LINKS

Project Input Transformer Presets Browser on page 994

MIDI Modifiers

MIDI modifiers allow you to modify MIDI events during playback.

You can use them for the following purposes:

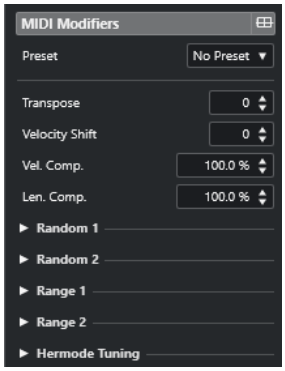
- To modify already existing MIDI events on MIDI or instrument tracks.
- To modify MIDI events that you play live.

NOTE

When playing live, select and record-enable the track, and activate **MIDI Thru Active** in the **Preferences** dialog (**MIDI** page).

MIDI Modifiers Section

- To open the **MIDI Modifiers** section, select a MIDI track, and, in the **Inspector**, click **MIDI Modifiers**.



NOTE

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 produce 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

The maximum velocity is 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 1/Random 2

Allows you to introduce random variations to various properties of MIDI notes.

Range 1/Range 2

Allows you to specify a pitch or velocity range and to either force all notes to fit within this range or to exclude all notes outside this range from playback.

Hermode Tuning

Activate **Apply Tuning** to apply Hermode tuning to the notes played on this track. Activate **Use for Analysis** to use the notes you played on this track to calculate retuning.

RELATED LINKS

Musical Scale Setup Dialog on page 933

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 one of the **Random** sections and in the **Random Target** pop-up menu, select the note property you want to randomize.
4. Specify the limits of the randomization in the value fields.

   The values vary between the minimum and maximum value. You cannot set the minimum value higher than the maximum value.
5. Optional: Repeat for other random values.
6. Play back the track to listen to 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 Target** pop-up menu and selecting **Off**.

Setting up Ranges

You can filter out pitches or velocities that do not match a specified range, or you can 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 one of the **Range** sections, and in the **Range Target** 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** sections.

AFTER COMPLETING THIS TASK

To deactivate the function, open the **Range Target** pop-up menu, and select **Off**.

Range Modes

The **Range Target** pop-up menu offers different range modes to choose from. Values are displayed 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 specified by setting **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 changes the tuning of the notes that you play. It 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. 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. Open the **Hermode Tuning** section and activate **Apply Tuning**.
4. Activate **Use for Analysis** to use the notes you play to calculate retuning.

   NOTE

   If you use tracks with acoustic piano, activate **Use for Analysis**, and deactivate **Apply Tuning**. This excludes the piano from being tuned, as this 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 can listen to 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. With VST instruments that support Note Expression, this also works in **MIDI Thru** mode.

If you use a track with a loaded VST 2 instrument, the notes you play are retuned on every keystroke.

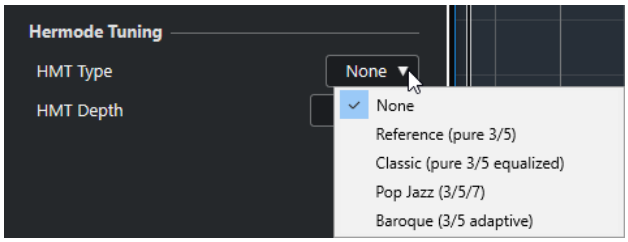
RELATED LINKS

Hermode Tuning on page 753

Hermode Tuning

You can select different Hermode tuning types.

- To select a Hermode 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, as well as 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.

Freezing MIDI Modifiers

You can apply all filter settings permanently to the selected track. The settings are applied to the events on the track, and all modifiers are set to zero.

PROCEDURE

1. Select the MIDI track.
2. Select **MIDI** > **Freeze MIDI Modifiers**.

RESULT

The following settings are frozen:

- Several settings in the top section of the **Inspector**, such as **Track Delay**.
- The settings in the **Routing** section, such as **Program Selector**, and **Bank Selector**.
- The settings in the **MIDI Modifiers** section, such as **Transpose**, **Vel. Shift**, **Vel. Comp.**, and **Len. Comp.**.
- The settings in the **MIDI Inserts** section, such as arpeggiators.
- The info line settings **Transpose** and **Velocity**.

RELATED LINKS

Basics Section for MIDI Tracks on page 137

MIDI Effects

MIDI effects allow you to transform the MIDI data played back from a track in real time.

You can add new events by using MIDI effects, or you can change MIDI event properties like pitches, for example.

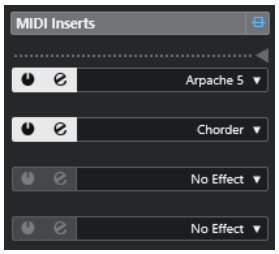
NOTE

For a description of the MIDI effect plug-ins included with Cubase, refer to the separate 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 entire signal passes through the effect.

- To open the **MIDI Inserts** section, select a MIDI track, and, in the **Inspector**, click **MIDI Inserts**.



You can add up to four MIDI insert effects. The following parameters are available:

MIDI Inserts Bypass on/off

Allows you to bypass all insert effects for the track.

Divider

Allows you to record the output of the MIDI insert effect on a MIDI or instrument track. Insert effects above the divider are recorded. Insert effects below the divider are played back.

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 to open its control panel. To remove an effect, select **No Effect**.

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

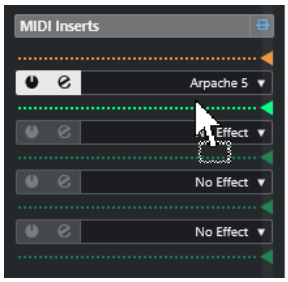
For a description of the MIDI effects included with Cubase, refer to the separate document **Plug-in Reference**.

Recording a MIDI Insert Effect

You can record the output of a MIDI insert effect, that is, the events are created on a MIDI or instrument track.

PROCEDURE

1. In the global track controls area of the track list, click **Add Track**.
2. Click **Instrument**.
3. Open the **Instrument** pop-up menu, and select a VST instrument.
4. Click **Add Track**.
   The instrument track is added to the track list, and the control panel of the selected VST instrument is opened.
5. On the instrument track, activate **Record Enable**.
6. In the **Inspector**, open the **MIDI Inserts** section.
7. Click the first insert effect slot, and select a MIDI insert effect.
8. Drag the divider down so that the insert effect is above the divider.
   Insert effects above the divider are recorded on the track.



9. On the **Transport** panel, activate **Record**, and use your MIDI keyboard or the **On-Screen Keyboard** to play some notes.

RESULT

The notes that you play are modified by the MIDI insert effect and recorded on the track.

AFTER COMPLETING THIS TASK

You can edit the recorded MIDI events in the **Key Editor**, for example.

RELATED LINKS

MIDI Inserts on page 754

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. As a result, you obtain 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 open the **MIDI Sends** section, select a MIDI track, and, in the **Inspector**, click **MIDI Sends**.

You can add up to four MIDI send effects.

MIDI Sends Bypass on/off

Allows you to bypass all send effects for the track.

Activate Send

Allows you to activate/deactivate the selected effect.

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**.

Pre/Post MIDI Modifiers and Inserts

Activate this to send the MIDI signals to the send effects before the MIDI modifiers and insert effects.

Select Effect Type

Allows you to select and activate an effect and to open its control panel. To remove an effect, select **No Effect**.

MIDI Send Group and Channel

Allows you to determine on which MIDI group and channel the processed MIDI events are sent.

MIDI Send Destination

Allows you to determine to which MIDI output the processed MIDI events are sent.

Presets

Some MIDI effects include a number of presets for instant use.

Presets are available in the **Preset** pop-up menu. If you change a loaded preset, the preset name is shown with an asterisk to indicate that the preset contains unsaved changes. To save your changes, open the **Preset** pop-up menu, and select **Save Changes as Preset**.

Transpose and Velocity on the Info Line

You can edit the transposition and the velocity for selected MIDI events and parts on the **Project** window info line. This only affects the notes in playback.

- Use the **Transpose** field to transpose the selected parts in semitone steps.

  The value is added to the transposition set for the entire track.

- Use the **Velocity** 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 329
Key Editor Info Line on page 823
Drum Editor Info Line on page 867

Using MIDI Devices

The **MIDI Device Manager** allows you to work with MIDI devices, that is, representations of external MIDI hardware.

You can install preset MIDI devices or define new ones. This is useful for global control and patch selection.

Program Change Messages and Bank Select Messages

To select a patch, that is, a sound in your MIDI device, you must send a program change message to that device.

Program Change Messages

You can record program change messages or enter them in a MIDI part. You can open the **Routing** section of the **Inspector** for the MIDI track and select a value in the **Program Selector** field.

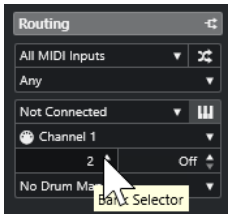
Program change messages allow you to choose from 128 different patches in your MIDI device.

Bank Select Messages

Many MIDI instruments, however, contain a larger number of patch locations. To make these available from within Cubase, you must send bank select messages.

Bank select messages allow you to choose from 128 different programs in your MIDI device.

If your device supports MIDI bank select, you can open the **Routing** section of the **Inspector** for the MIDI track and choose a value in the **Bank Selector** field to select a bank. Then use 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. This can lead to confusion and make it hard to select the correct sound. What is more, selecting patches by numbers seems unnecessarily cumbersome, in view of the fact that most state-of-the-art instruments use names for their patches.

The **MIDI Device Manager** allows you to specify which MIDI devices you are using, and to select to which device each MIDI track is routed. This enables you to select patches by name via the track list or the **Routing** section of the **Inspector**.

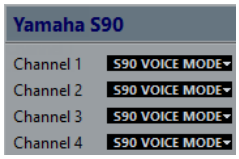
RELATED LINKS
MIDI Device Manager on page 760

Patch Banks

The **Patch Banks** list can have two or more main banks, depending on the selected device.

The reason for this is that different types of patches are handled differently by the instruments. In general, patches are regular programs that you play one at a time. Performances, however, may be combinations of programs, which can be split across the keyboard, layered, or used for multitimbral playback, etc.

For devices with several banks you can select **Bank Assignment** to specify which bank a specific MIDI channel should use.



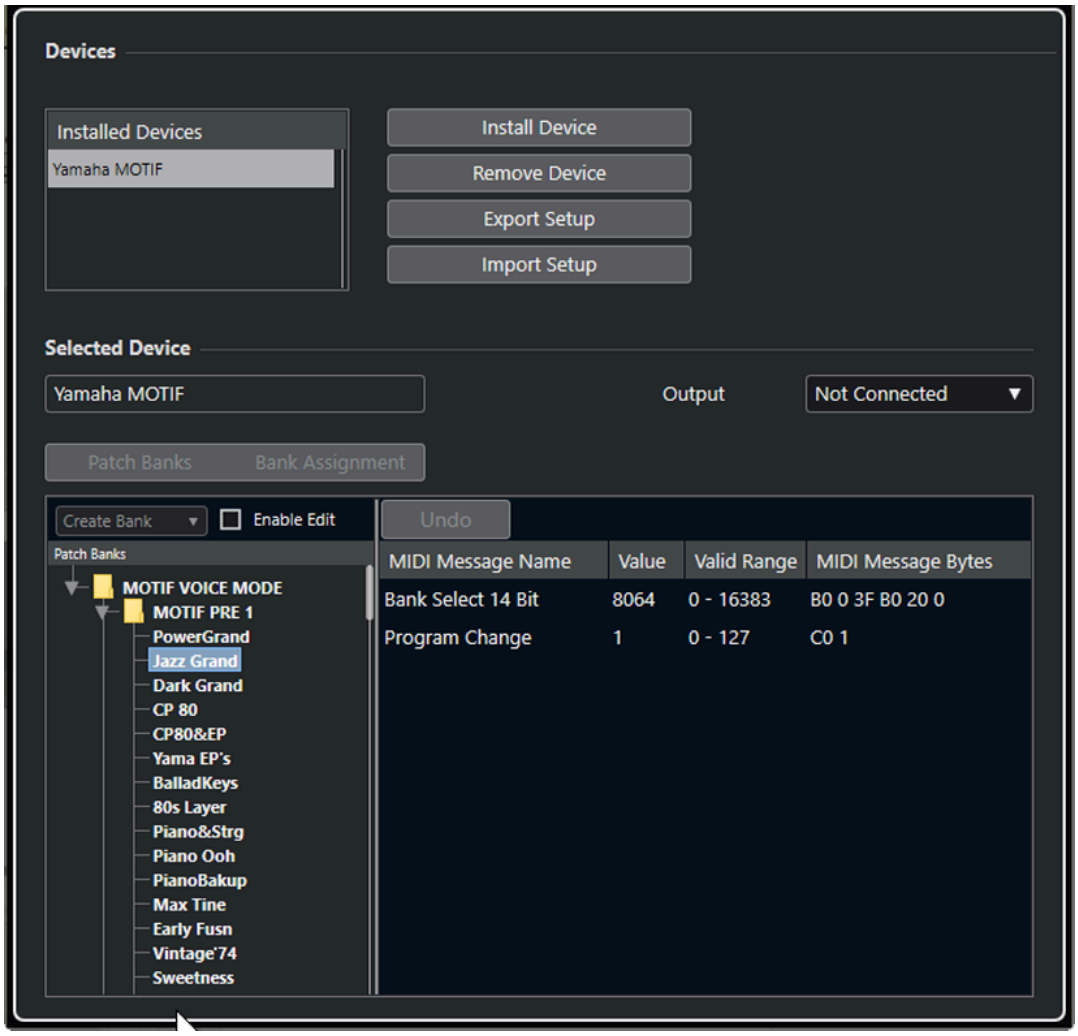
The **Bank Assignment** affects which bank is displayed when you select programs by name for the device in the track list or **Inspector**.

Many instruments use MIDI channel 10 as the exclusive drum channel, for example. If this is the case, select the **Drums** or the **Rhythm Set** or the **Percussion** bank for channel 10 from the list. This allows you to choose from different drum kits in the track list or in the **Inspector**.

MIDI Device Manager

The **MIDI Device Manager** allows you to install preset MIDI devices or to define new ones.

- To open the **MIDI Device Manager**, select **Studio** > **More Options** > **MIDI Device Manager**.



Installed Devices list

Lists the connected MIDI devices and the imported device setups.

Install Device

Allows you to install a preset device. These presets are simple patch name scripts that do not include any device mapping of parameters and controls and no graphic panels.

For more information about patch name scripts, see the separate document **MIDI Devices**.

Remove Device

Removes the selected device.

Export Setup

Exports the MIDI device setup as an XML file.

Import Setup

Allows you to import an XML file of a MIDI device setup. Device setups can include device mapping, and/or patch information. Device setups are also added to the list of installed devices when imported.

Output

Allows you to select a MIDI output for the selected device.

Enable Edit

Activate this to enable the editing of the selected device.

Commands

Allows you to edit the selected device. The patch structure for the selected device is shown to the left.

MIDI Messages

Shows which MIDI messages are sent out to select the patch that is highlighted in the list to the left.

Commands for Patches

In the **MIDI Device Manager**, patches can be structured in banks, folders, and presets.

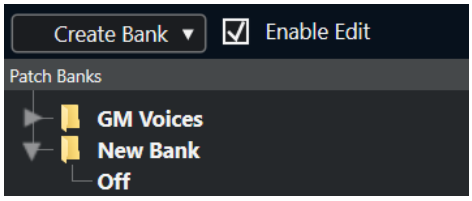
NOTE

Activate **Enable Edit** to use the commands pop-up menu for the selected device.

The commands pop-up menu contains the following items:

Create Bank

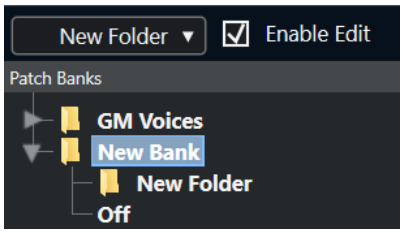
Creates a new bank in the **Patch Banks** list. You can rename this by clicking on it and typing a new name.



If you specify more than one bank, a **Bank Assignment** button is added next to the **Patch Banks** button.

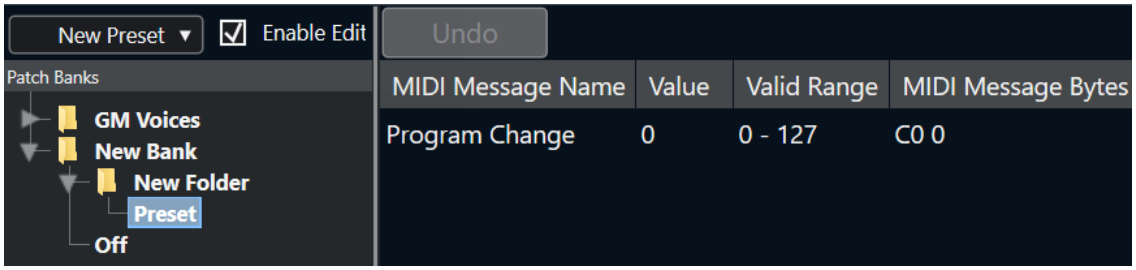
New Folder

Creates a new subfolder in the selected bank or folder. This can correspond to a group of patches in the MIDI device, or just be a way for you to categorize sounds.



New Preset

Adds a new preset in the selected bank or folder. If you select it, the corresponding MIDI events are shown to the right. The default program change value for a new preset is 0, but you can adjust the number in the **Value** column.



You can move presets among banks and folders via drag and drop.

Add Multiple Presets

Allows you to set up a range of presets and to add them to the selected bank or folder.

NOTE

You can remove banks, folders, and presets by selecting them and pressing **Backspace**.

IMPORTANT

For details on which MIDI events are used for selecting patches in the MIDI device, consult its documentation.

RELATED LINKS
Add Preset Functions on page 763
Patch Banks on page 760

Add Preset Functions

If you add or select a preset for the selected bank or folder, further functions become available to the right. If you add multiple presets, the **Add Multiple Presets** dialog opens with additional functions.

The following columns are available:

MIDI Message Name

The name of the MIDI message.

- To change an event, click it, and select another option from the pop-up menu.
- To add another event, click below the last event, and select an option from the pop-up menu.
- To remove an event, select it, and press **Delete** or **Backspace**.

IMPORTANT

If you insert a **Bank Select** event, keep in mind that, depending on your device, you must choose **CC: BankSelect MSB**, **Bank Select 14 Bit**, **Bank Select 14 Bit MSB-LSB Swapped** or some other option.

Value

The value of the event.

MIDI Message Bytes

The message bytes of the event.

Valid Range

The valid range of the event.

Default Name

You can specify a default name for multiple presets. The added events assume this name, followed by a number.

Installing Preset MIDI Devices

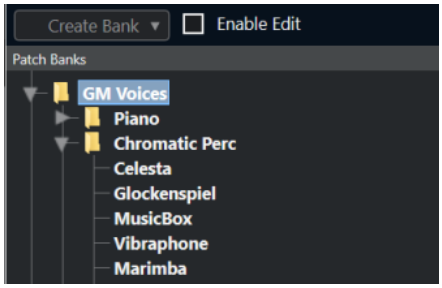
You can install preset MIDI devices, that is, patch name scripts that do not include device mapping.

PROCEDURE

1. Select **Studio** > **More Options** > **MIDI Device Manager**.
2. Click **Install Device**.
3. In the **Add MIDI Device** dialog, do one of the following:
   - Select the script of the device from the list.
   - Select **GM Device** or **XG Device** if your device is not listed but compatible with these standards, and type in the name of your instrument in the next dialog.
4. Click **OK**.
5. Select the device from the **Installed Devices** list, and open the **Output** pop-up menu.
6. Select the MIDI output that the device is connected to.

RESULT

The structure of the patch name script is shown. It usually has one or several layers of banks or groups with patches.



Selecting Patches for Installed Devices

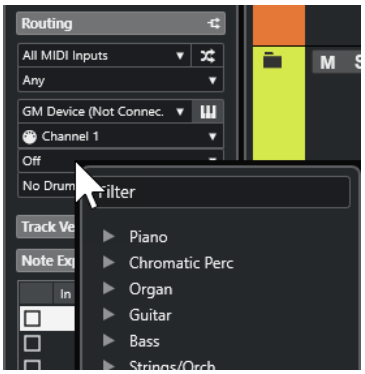
If you install a device and you select it from the **Output Routing** pop-up menu for the MIDI track, you can select patches by name.

PROCEDURE

1. Select the MIDI track that you want to associate to the installed device.
2. In the **Routing** section of the **Inspector**, select the installed device.

   This routes the MIDI track to the MIDI output, as specified for the device in the **MIDI Device Manager**. The **Bank Selector** and the **Program Selector** fields are replaced by a single **Program Selector** field that reads **Off**.
3. Open the **Program Selector**.

   A program list, similar to the one in the **MIDI Device Manager**, is shown.



4. Select an entry from the list.

RESULT

The corresponding MIDI message is sent to the device.

Renaming Patches in Devices

If you have replaced some of the factory presets with your own patches, you can modify the device so that the patch name list matches the actual device.

PROCEDURE

1. Select **Studio** > **More Options** > **MIDI Device Manager**.
2. Select the device from the **Installed Devices** list.
   Make sure that the **Patch Banks** tab is selected.
3. Activate **Enable Edit**.
4. In the **Patch Banks** list, locate the patch you want to rename, and click the name.
5. Type in the new name, and press **Return**.

RESULT

The patch is renamed.

AFTER COMPLETING THIS TASK

To avoid modifying the device by accident, deactivate **Enable Edit**.

Defining New MIDI Devices

You can define new MIDI devices.

PROCEDURE

1. Select **Studio** > **More Options** > **MIDI Device Manager**.
2. Click **Install Device**.
3. In the **Add MIDI Device** dialog, select **Define New**.
4. Click **OK**.
5. In the **Create New MIDI Device** dialog, enter the name of the device and activate the MIDI channels that you would like to use.
6. Click **OK**.
7. Select the device in the **Installed Devices** list.

8. Activate **Enable Edit** and use the commands pop-up menu to organize the patch structure of the new device.

MIDI Functions

MIDI functions allow you to permanently edit MIDI events or MIDI parts in the **Project** window or from within a MIDI editor.

Which events are affected when you use a MIDI function depends on the function, the active window, and the current selection:

- 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, MIDI functions apply to all selected events. If no events are selected, all events in the edited parts are affected.

NOTE

Some MIDI functions only apply to MIDI events of a certain type. For example, **Delete Controllers** only applies to MIDI controller events.

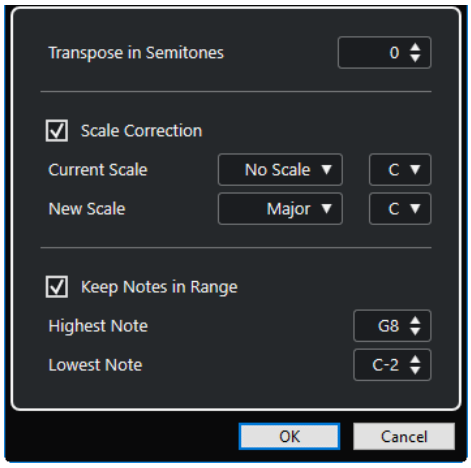
RELATED LINKS

MIDI Realtime Parameters and MIDI Effects on page 747

Transpose Setup Dialog

The **Transpose Setup** dialog contains settings for transposing the selected events.

- To open the **Transpose Setup** dialog, select the MIDI notes that you want to transpose, and select **MIDI** > **Transpose Setup**.



The following settings are available:

Transpose in Semitones

Sets the amount of transposition.

Scale Correction

Transposes the selected notes to the closest note of a specific scale type. This allows you to change the key and the tonality.

- Select a root note and a scale type for the current scale in the **Current Scale** pop-up menus.
- Select a root note and a scale type for the new scale in the **New Scale** pop-up menus.

  NOTE

  If the new root note differs from the current root note, this leads to an entirely different key.

Keep Notes in Range

Limits the transposition of notes to the note values that you specify with the **Highest Note** and **Lowest Note** settings.

NOTE

Notes that would be outside the range after transposition are 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 is transposed as far as possible, that is, to notes specified with the **Highest Note** and **Lowest Note** values. If you set **Highest Note** and **Lowest Note** to the same value, all notes are transposed to this pitch.

NOTE

You can also use the transpose track for transposing.

RELATED LINKS
Musical Scale Setup Dialog on page 933

Merging MIDI Events into a New Part

You can merge all MIDI events, apply MIDI modifiers and effects, and generate a new part.

PROCEDURE

1. Do one of the following:
   - Mute the tracks or parts that you do not want to include in the merge.
   - Solo the track that contains the events that you want to include in the merge.
2. Set up the left and right locators to encompass the area that you want to merge.

   NOTE

   Only events starting within this area are included.
3. Optional: Select a track for the new part.

   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.
4. Select **MIDI** > **Merge MIDI in Loop**.
5. In the **MIDI Merge Options** dialog, make your changes.
6. Click **OK**.

RESULT

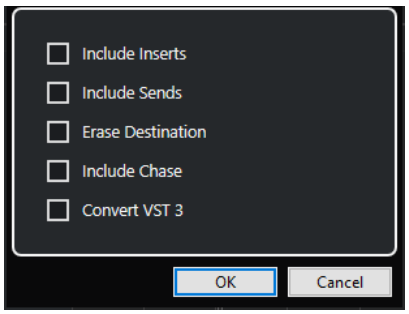
A new part is created between the locators on the destination track, containing the processed MIDI events.

RELATED LINKS

MIDI Merge Options Dialog on page 769
Freezing MIDI Modifiers on page 754

MIDI Merge Options Dialog

- To open the **MIDI Merge Options** dialog, select a MIDI part, and select **MIDI** > **Merge MIDI in Loop**.



The following options are available:

Include Inserts

Applies MIDI insert effects and MIDI modifiers.

Include Sends

Applies MIDI send effects.

Erase Destination

Deletes MIDI data between the left and right locators on the destination track.

Include Chase

Includes events placed outside the selected part, but relating to it in the processing, for example, to a program change right before the left locator.

Convert VST 3

Converts all VST 3 data within the selected area to MIDI data.

RELATED LINKS

Chase on page 259

Applying Effects to a Single Part

You can apply MIDI modifiers and effects to a single part.

PROCEDURE

1. Set up your MIDI modifiers and MIDI effects for the part.
2. Set the locators to encompass the part.
3. From the track list, select the track with the part.
4. Select **MIDI** > **Merge MIDI in Loop**.
5. In the **MIDI Merge Options** dialog, activate **Erase Destination**.

6. Click **OK**.

RESULT

A new part is created on the same track, containing the processed events. The original part is deleted.

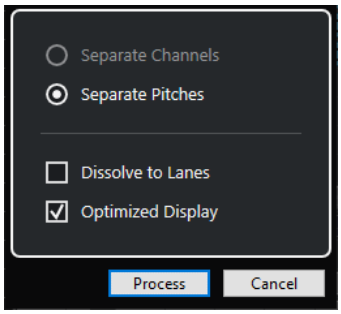
AFTER COMPLETING THIS TASK

Turn off or reset all MIDI modifiers and effects, so that the track plays back as before.

Dissolve Part Dialog

You can separate MIDI events in a part according to channels or pitches and dissolve the part to different tracks or lanes.

- To open the **Dissolve Part** dialog, select the MIDI part you want to dissolve, and select **MIDI** > **Dissolve Part**.



The following settings are available:

Separate Channels

Separates MIDI events according to their channel. This is useful for MIDI parts on MIDI channel **Any** that contain events on different MIDI channels.

Separate Pitches

Separates MIDI events according to their pitch. This is useful for drum and percussion tracks, where different pitches usually correspond to separate drum sounds.

Dissolve to Lanes

Dissolves the part to lanes.

Optimized Display

Automatically removes silent areas of the resulting parts.

NOTE

This option is not available when **Dissolve to Lanes** is activated.

Dissolving Parts into Separate Channels

You can dissolve MIDI parts that contain events on different MIDI channels, and you can distribute the events into new parts on new tracks, one for each MIDI channel found.

PROCEDURE

1. Select the parts that contain MIDI events on different channels.
2. Select **MIDI** > **Dissolve Part**.

3. Activate **Separate Channels**.
4. Click **Process**.

RESULT

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 copied into the part on the track with the corresponding MIDI channel, and the original parts are muted.

MIDI Channel Setting

Setting a track to MIDI channel **Any** causes each MIDI event to play back on its original MIDI channel, rather than on a channel set for the whole track.

There are two situations when **Any** channel tracks are useful:

- 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. Setting the channel to **Any** allows you to play back the recording with different sounds for each zone (since the different MIDI notes play back on separate MIDI channels).
- 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** causes the imported file to play back as intended.

Dissolving Parts into Separate Pitches

You can dissolve MIDI parts that contain events of different pitches and distribute the events into new parts on new tracks, one for each MIDI pitch found. This is useful if different pitches are used for separating different sounds, such as 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 that contain MIDI events of different pitches.
2. Select **MIDI** > **Dissolve Part**.
3. Activate **Separate Pitches**.
4. Click **Process**.

RESULT

For each MIDI pitch used in the selected parts, a new MIDI track is created. Each event is copied into the part on the track for the corresponding pitch, and the original parts are muted.

Repeating MIDI Events of Independent Track Loops

You can repeat the MIDI events inside an independent track loop to fill up a MIDI part. This is useful if you want to convert the events of an independent track loop to actual MIDI events.

PREREQUISITE

You have set up an independent track loop, and the **Key Editor** is open. The part ends after the end of the independent track loop.

PROCEDURE

- Select **MIDI** > **Repeat Loop**.

RESULT

The events of the independent track loop are repeated, up to the end of the part. Events that are located to the right of the independent track loop are replaced.

RELATED LINKS

Setting up the Independent Track Loop on page 549

Extending MIDI Notes

You can extend MIDI notes so that they reach the next notes.

PREREQUISITE

A MIDI part with some note events is open in the **Key Editor**.

PROCEDURE

1. Select the note events that you want to extend to the next notes.
2. Select **MIDI** > **Functions** > **Legato**.

RESULT

The selected note events are extended to the start of the next notes.

NOTE

To specify a gap or overlap for this, adjust the **Legato Overlap** setting in the **Preferences** dialog (**Editing—MIDI** page).

RELATED LINKS

Key Editor Inspector on page 824

Fixing MIDI Note Lengths

You can set the length of selected MIDI notes to the **Length Quantize** value.

PREREQUISITE

A MIDI part with some note events is open in the **Key Editor**.

PROCEDURE

1. On the **Key Editor** toolbar, open the **Length Quantize** pop-up menu, and select the desired note length.
2. Select the note events that you want to fix.
3. Select **MIDI** > **Functions** > **Fixed Lengths**.

RESULT

The selected note events are set to the specified **Length Quantize** value.

RELATED LINKS
Key Editor Toolbar on page 815

Fixing MIDI Note Velocities

You can set the velocity of selected MIDI notes to the **Note Insert Velocity** value.

PREREQUISITE

A MIDI part with some note events is open in the **Key Editor**.

PROCEDURE

1. On the **Key Editor** toolbar, open the **Set up Insert Velocities** pop-up menu, and select a velocity value.
2. Select the note events that you want to fix.
3. Select **MIDI** > **Functions** > **Fixed Velocity**.

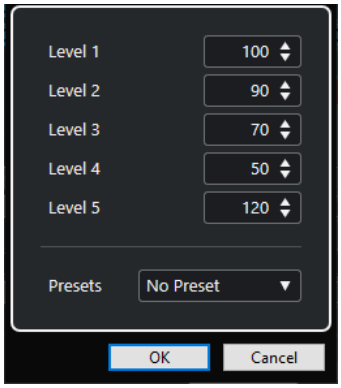
RESULT

The selected note events are set to the specified **Note Insert Velocity** value.

RELATED LINKS
Key Editor Toolbar on page 815

MIDI Insert Velocities Dialog

- To access the **MIDI Insert Velocities** dialog, open the **Set up Insert Velocities** pop-up menu in the **Key Editor** toolbar, and select **Setup**.



Level fields

Allow you to set the velocity values that are shown in the **Set up Insert Velocities** pop-up menu.

Presets

Allows you to save velocity values as presets.

RELATED LINKS
Key Editor Toolbar on page 815
Fixing MIDI Note Velocities on page 773
Velocity Dialog on page 775

Rendering Sustain Pedal Data to Note Lengths

You can render sustain pedal data to note lengths. This is useful if you recorded MIDI data with a MIDI keyboard and a sustain pedal and you want to extend the actual MIDI notes for as long as you hold the pedal, in order to edit the notes later.

PREREQUISITE

You recorded MIDI using a MIDI keyboard and a sustain pedal. The MIDI part is open in the **Key Editor**.

PROCEDURE

1. Select the note events.
2. Select **MIDI** > **Functions** > **Pedals to Note Length**.

RESULT

The selected notes are lengthened to match the off position of the sustain pedal, and the sustain controller on/off events are removed.

Deleting Overlaps

You can delete overlaps of notes that have the same or different pitches. This is useful if your MIDI instruments cannot handle overlapping events.

PROCEDURE

1. Select the note events.
2. Do one of the following:
   - Select **MIDI** > **Functions** > **Delete Overlaps (mono)**.
   - Select **MIDI** > **Functions** > **Delete Overlaps (poly)**.

RESULT

The overlapping MIDI notes are shortened, so that no note begins before another ends.

Editing Velocity

You can manipulate the velocity of notes.

PROCEDURE

1. Select the note events.
2. Select **MIDI** > **Functions** > **Velocity**.
3. Open the **Type** pop-up menu, and select an option.
4. Depending on the **Type**, enter a **Ratio**, an **Amount**, or an **Upper** and **Lower** value.
5. Click **OK**.

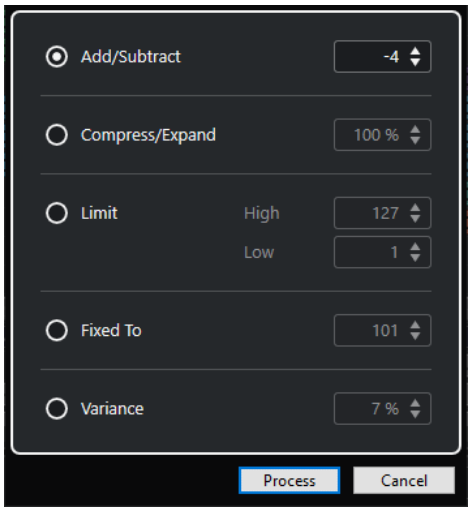
RESULT

The note velocities are changed according to your settings.

RELATED LINKS
Velocity Dialog on page 775

Velocity Dialog

- To open the **Velocity** dialog, select a MIDI part, and select **MIDI** > **Functions** > **Velocity**.



Add/Subtract

Adds the specified value to the velocity value. You can enter positive or negative values.

Compress/Expand

Compresses or expands the dynamic range of MIDI notes by the specified value. You can enter values from 0 to 300%. A factor higher than 1 (exceeding 100%) expands the differences between velocity values, while using a factor lower than 1 (below 100%) compresses them.

- To compress the dynamic range, use ratio values below 100%.

  After processing the compression, you can add a velocity amount to maintain the average velocity level.
- To expand the dynamic range, use ratio values above 100%.

  Prior to the expansion, you can adjust the velocity to the middle of the range.

Limit

Limits the velocity values so that they stay between the **Low** and the **High** values.

Fixed To

Fixes the velocity value to the specified value.

Variance

Sets the velocities to a value between the current velocity value and a lower value. You can specify the percentage of variance.

RELATED LINKS
Key Editor Toolbar on page 815
MIDI Insert Velocities Dialog on page 773
Fixing MIDI Note Velocities on page 773

Deleting Double Notes

You can delete double notes from selected MIDI parts, provided that they are of the same pitch and on the exactly the same position as their counterpart. Double notes can occur when recording in cycle mode after quantizing, for example.

PROCEDURE

1. Select the MIDI part that contains the double notes.
2. Select **MIDI** > **Functions** > **Delete Doubles**.

RESULT

The double notes are automatically deleted.

Deleting Controller Data

You can delete controller data from selected MIDI parts.

PROCEDURE

1. Select the MIDI parts that contain the controller data.
2. Select **MIDI** > **Functions** > **Delete Controllers**.

RESULT

The controller data is automatically deleted.

Deleting Continuous Controller Data

You can delete continuous controller data from selected MIDI parts.

PROCEDURE

1. Select the MIDI parts that contain the controller data.
2. Select **MIDI** > **Functions** > **Delete Continuous Controllers**.

RESULT

The continuous controller data is automatically deleted. However, On/Off events, such as sustain pedal events, are kept.

Restricting Polyphonic Voices

You can restrict polyphonic voices in selected MIDI notes or parts. This is useful if you have an instrument with limited polyphony and want to make sure that all notes are played.

PROCEDURE

1. Select the MIDI notes or parts that contain the voices.
2. Select **MIDI** > **Functions** > **Restrict Polyphony**.
3. Specify how many voices you want to use.
4. Click **OK**.

RESULT

The notes are trimmed as required, so that they end before the next note starts.

Thinning Out Controller Data

You can thin out controller data in selected MIDI parts. Use this to ease the load on your external MIDI devices, in case you have recorded very dense controller curves.

PROCEDURE

1. Select the MIDI parts that contain the controllers that you want to thin out.
2. Select **MIDI** > **Functions** > **Thin Out Data**.

RESULT

The controller data is thinned out.

Extracting MIDI Automation

You can convert continuous controllers of your recorded MIDI parts into MIDI track automation data, so that you can edit them in the **Project** window.

PROCEDURE

1. Select the MIDI part that contains the continuous controller data.
2. Select **MIDI** > **Functions** > **Extract MIDI Automation**.
3. Right-click the MIDI or instrument track in the **Project** window, and select **Show Used Automation (Selected Tracks)**.

   This shows the MIDI controller data on the automation track.

RESULT

In the **Project** window, an automation track is created for each of the continuous controllers in the MIDI part.

In the MIDI editors, the controller data is removed from the controller lane.

NOTE

This only works for continuous controllers. Data such as aftertouch, pitchbend, or SysEx cannot be converted to MIDI track automation data.

MIDI controller automation is also affected by the **Automation Merge Mode**.

RELATED LINKS

MIDI Controller Automation on page 807

Reversing the Playback Order of MIDI Events

You can invert the order of selected events or of all events in selected parts rhythmically. This causes the MIDI to play backwards. However, this is different from reversing an audio recording. The individual MIDI notes still play as usual, but the playback order changes.

PROCEDURE

1. Select the MIDI events or the MIDI part.
2. Select **MIDI** > **Functions** > **Reverse**.

RESULT

The playback order of the events is reversed, while the individual notes still play as usual in the MIDI instrument. Technically, this function reverses the note-on message of a note within a part or selection.

Inverting the Order of Selected MIDI Events

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.

PROCEDURE

1. Select the MIDI events or the MIDI part.
2. Select **MIDI** > **Functions** > **Mirror**.

RESULT

The order of the events is inverted, while the MIDI instrument still plays the individual notes as usual. 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.

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** displays MIDI notes as a musical score and offers basic score editing and printing.
- 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 and other track types in context.

RELATED LINKS
Key Editor on page 814
Drum Editor on page 857
List Editor on page 878
Score Editor on page 844
In-Place Editor on page 893

Common MIDI Editor Functions

You can use the tools and functions of the MIDI editors to process MIDI parts in various ways.

Changing the Ruler Display Format

You can change the display format for the ruler. By default, the ruler shows the timeline in the display format that is selected on the **Transport** panel.

PROCEDURE

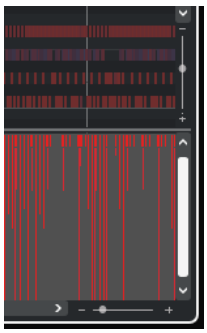
- Do one of the following:
  - Click the arrow button to the right of the ruler, and select an option from the pop-up menu.
  - Right-click the ruler, and select an option from the pop-up menu.

RELATED LINKS
Ruler Display Format Menu on page 49

Zooming in MIDI Editors

The MIDI editors provide several zooming options:

- The zoom sliders.



- The **Zoom** tool.
- The **Zoom** submenu in the **Edit** menu.

NOTE

To use the **Zoom** tool for horizontal and vertical zooming, deactivate **Zoom Tool Standard Mode: Horizontal Zooming Only** in the **Preferences** dialog (**Editing—Zoom** page).

RELATED LINKS
Editing - Zoom on page 1134

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**.

Handling Note Events

Event Colors Menu

You can select different color schemes for the note events in the MIDI editor.

- To open the **Event Colors** pop-up menu, click **Event Colors** on the toolbar.

The following options are available:

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 if 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.

Voice

The note events get different colors depending on their voice (soprano, alto, tenor, etc.).

Scale/Chords

The note events get different colors depending on whether they match the current chord, scale, or both.

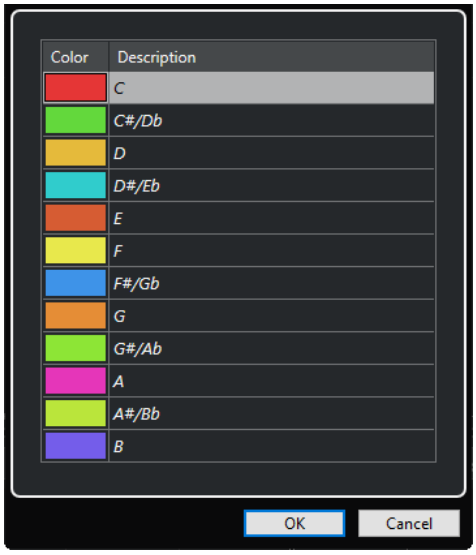
For all of the options except **Part** and **Sound Slot**, the pop-up menu also contains a **Setup** option. This option opens a dialog in which you can specify the colors that are associated with velocities, pitches, or channels.

RELATED LINKS
Selecting Note Events on page 783
Color Picker on page 93
Event Colors Setup Dialog on page 781

Event Colors Setup Dialog

The event colors setup dialogs allow you to set up colors for event properties such as velocities, pitches, channels, or chords and scales.

- To open the event colors setup dialog for the selected color scheme option, open the **Event Colors** pop-up menu in the **Key Editor**, **Drum Editor**, **List Editor** or **In-Place Editor** toolbar, and select **Setup**.



Pitch Color Setup dialog

The following options are available:

Color fields

Click a field to open the **Color Picker** that allows you to specify a new color.

Description

Shows further information about the usage of the color.

OK

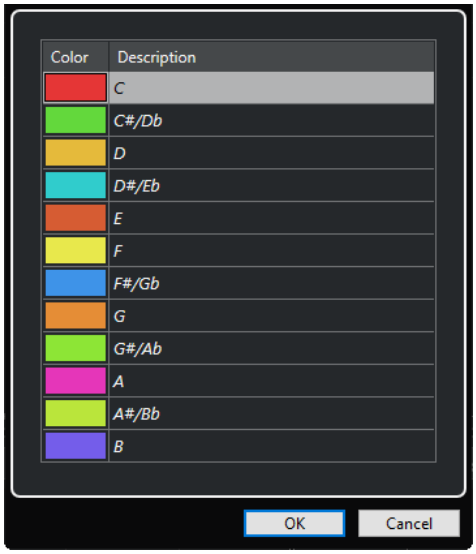
Applies your changes and closes the dialog.

RELATED LINKS
Event Colors Menu on page 780
Color Picker on page 93

Pitch Colors Setup

You can set up Cubase to color events depending on their pitch. The color scheme is defined in the **Pitch Colors** setup dialog.

- To open the event **Pitch Colors** setup dialog, open the **Event Colors** pop-up menu in the **Key Editor** toolbar, activate **Pitch**, and then select **Setup**.



The following options are available:

Color fields

Click a field to open the **Color Picker** that allows you to specify a new color.

Description

Shows further information about the usage of the color.

OK

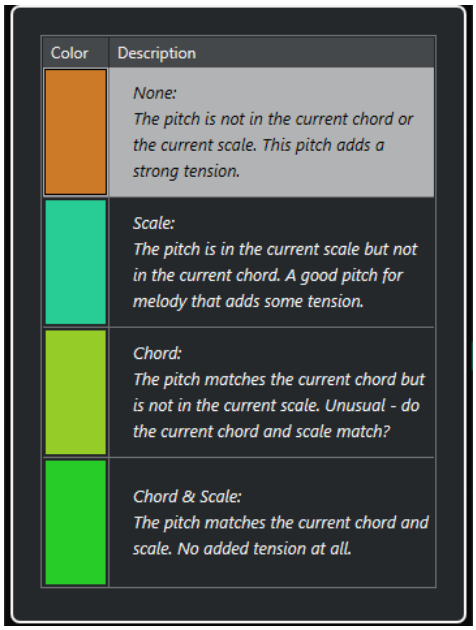
Applies your changes and closes the dialog.

RELATED LINKS
Event Colors Menu on page 780
Color Picker on page 93

Chord and Scale Colors Setup

You can set up Cubase to color events depending on whether they match the current chord, scale, or both. The color scheme is defined in the **Chord and Scale Colors** setup dialog.

- To open the event **Chord and Scale Colors** setup dialog, open the **Event Colors** pop-up menu in the **Key Editor** toolbar, activate **Scale/Chords**, and then select **Setup**.



The following options are available:

Color fields

Click a field to open the **Color Picker** that allows you to specify a new color.

Description

Shows further information about the usage of the color.

OK

Applies your changes and closes the dialog.

RELATED LINKS
Event Colors Menu on page 780
Color Picker on page 93

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.
- Use the **Range Selection** tool to select all note events in a specific time range.
- 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.

NOTE

If you select the notes in the event display, the note event is displayed in black, and only its outline is shown in color. On the keyboard display, the keys that correspond to the note pitches of the selected notes are also displayed in color.

RELATED LINKS
Event Colors Menu on page 780
Select Submenu for Note Events on page 784
Editing on page 1128

Select Submenu for Note Events

The **Select** submenu offers you several options to select note events.

- To open the **Select** submenu for a note event, select the note event, and 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 785

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**.

NOTE

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.

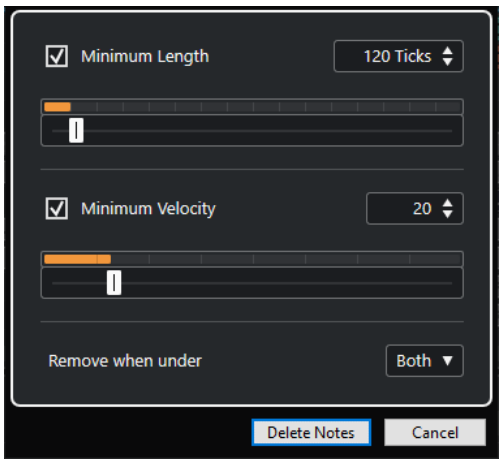
Deleting Note Events

- To delete note events, click on them with the **Erase** tool or select them, and press **Backspace**.

Delete Notes Dialog

The **Delete Notes** dialog allows you delete note events that do not match a specific length or velocity.

- To open the **Delete Notes** dialog, select a MIDI part in the **Project** window, and select **MIDI** > **Functions** > **Delete Notes**.



The following options are available:

Minimum Length

Allows you to set a minimum note length in ticks. Notes that are shorter than the set value are deleted. You can use the value field or the graphical length display. If you click the field to the right of the graphical length display, the scale for the display changes. You can set it to 1/4 bar, one bar, two bars or four bars.

Minimum Velocity

Allows you to set a minimum note velocity. Notes with a lower velocity than the set value are deleted.

Remove when under

This option is only available if **Minimum Velocity** and **Minimum Length** are both activated. It allows you to choose if both or just one of the criteria must be met for notes to be deleted.

Trimming 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 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.

  NOTE

  If you selected several note events and you adjust 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/Opt**, and drag the note events to a new position.

  If **Snap** is activated, it determines to positions to which you can copy notes.
- To copy the selected note events and to place them 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/Opt**, 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**.

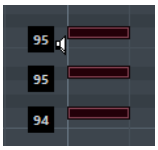
  If you select the **Bars+Beats** display format, the snap grid is set by the quantize value on the toolbar. This makes it possible to snap to straight note values and to swing grids that have been set up in the **Quantize Panel**.

- 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 assume the velocity value that is set in the **Note Insert Velocity** field on the toolbar. There are different methods to set the velocity.

- Use the tool modifier for **Edit Velocity** that is specified in the **Preferences** dialog (**Tool Modifiers** page). 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 adjust the value.

  Value changes are applied to all selected notes.

- Open the **Note 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 **Note 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.

Looping MIDI Parts

The **Independent Track Loop** function allows you to loop a MIDI part independently from 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 **Editor** tab in the lower zone of the **Project** window.

   If the button is not visible, right-click the toolbar, and activate **Independent Track Loop**.

   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/Opt**-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 the end of the loop range are displayed on the status line.

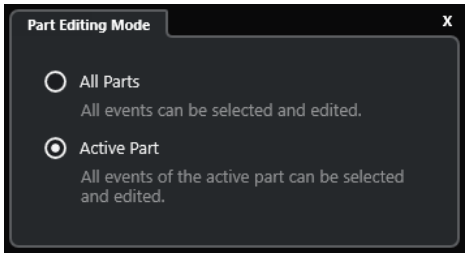
AFTER COMPLETING THIS TASK

To repeat the events of the loop range and fill up the active MIDI part, select **MIDI** > **Repeat Loop**.

Part Editing Mode Pane

The **Part Editing Mode** pane allows you to define exactly which events or parts can be selected and edited when you select multiple events with a selection rectangle in the event display.

- To open the **Part Editing Mode** pane, click **Part Editing Mode** in the **Multiple Part Controls** section of the **Key Editor**, **Drum Editor**, or **List Editor** toolbar.



The following options determine what is selected when you drag a selection rectangle:

All Parts

Selects all events of all visible parts.

Active Part

Selects events of the active part.

Handling Several MIDI Parts

The **Multiple Part Controls** section in the **Key Editor**, **Drum Editor**, and **List Editor** toolbar features controls and tools for working with multiple parts.

Show Part Borders

- To display any borders defined for the active part, activate **Show Part Borders**.

  If this option is activated, all parts, except for the active part, are grayed out.
- To change the size of the part, drag the part borders.

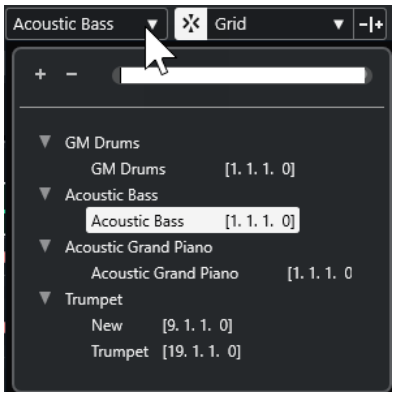
  The part borders display the name of the active part.

Part Editing Mode

- To restrict editing operations to the active part, activate **Active Part** in the **Part Editing Mode** pane.

Activate Part for Editing

The **Activate Part for Editing** pop-up menu lists all parts that were selected when you opened the editor. The list is arranged in the same way as the track list, and the parts are listed under the name of the corresponding track. The parts are arranged according to their position on the timeline. You can use the search field to search for part names.



To activate a part for editing, click its name in the list.

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.

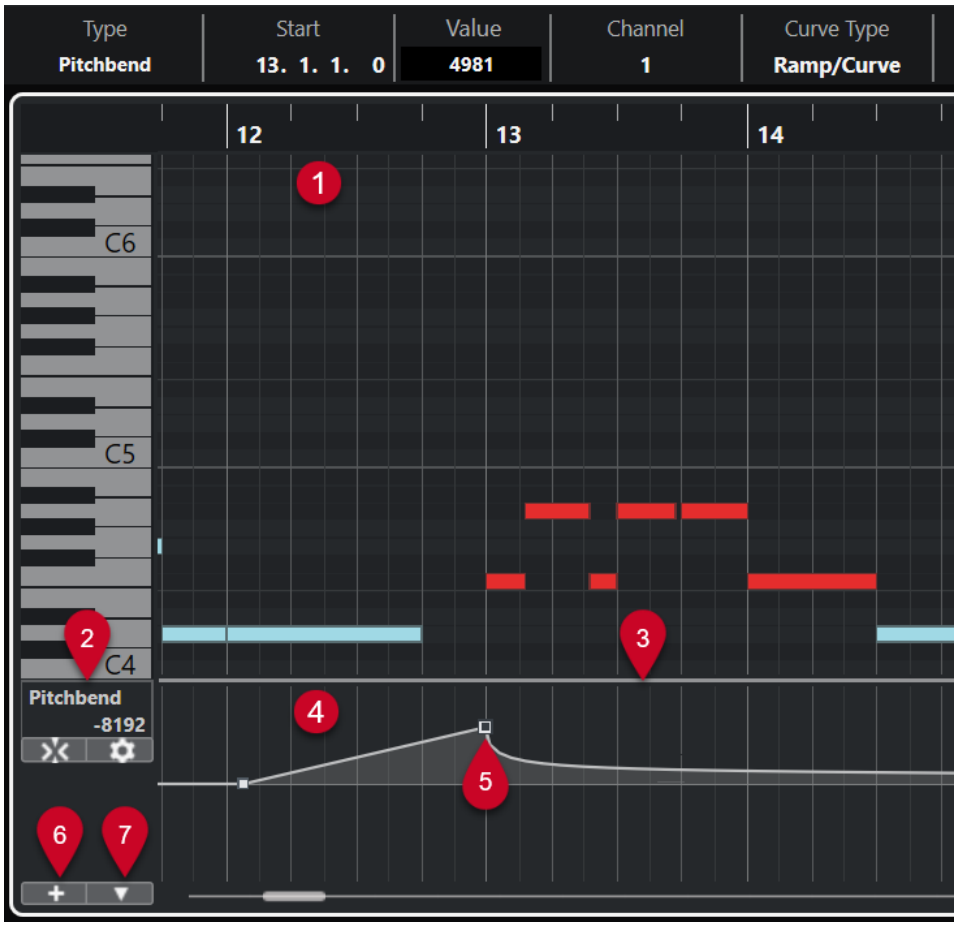
RELATED LINKS
Multiple Part Controls on page 820
Part Editing Mode Pane on page 788

Controller Display

The controller display is the area at the bottom of the **Key Editor**, the **Drum Editor**, and the **In-Place Editor**.

To show the controller display, do one of the following:

- Open the **Controller Lane Setup** pop-up menu in the **Key Editor**, the **Drum Editor**, or the **In-Place Editor**, and select **Show/Hide Controller Lanes**.
- On the **Key Editor** or the **Drum Editor** toolbar, click **Set up Window Layout**, and activate **Controller Lanes**.



The following options are available:

1 Note display

Contains a grid in which MIDI notes are displayed as boxes.

2 Controller Selection and Functions menu

Allows you to select which controller type is displayed, and contains editing functions for controller lanes and events.

3 Divider

Drag the divider between the note display and the controller display to resize the display areas.

4 Controller display

Shows one or multiple controller lanes.

5 Controller events

The controller display shows the added controller events of the selected controller type and their current values. Controller events have no length. Their values are valid until the start of the next event.

Velocity values are displayed as vertical bars, with higher bars corresponding to higher velocity values. Each velocity bar corresponds to a note in the note display.

All other controller events are shown as steps, with heights corresponding to the values of the events.

6 **Create Controller Lane**

Allows you to add controller lanes so that you can view and edit different controllers at the same time. Each controller lane can display one of the following properties or event types:

- Velocity
- Pitchbend
- Aftertouch
- Poly Pressure
- Program Change
- SysEx (System Exclusive) events
- Continuous Controllers

7 **Controller Lane Setup**

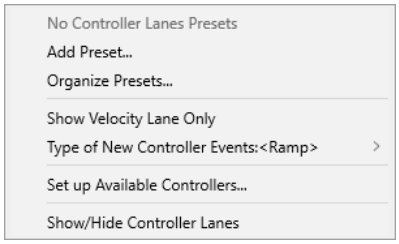
Contains setup functions for controller lanes, and allows you to add and organize presets.

RELATED LINKS
Editing Velocity Events on page 798
Controller Event Editor on page 811

Controller Lane Setup Menu

The **Controller Lane Setup** pop-up menu allows you to add lanes and to select which event type is displayed.

- To open the **Controller Lane Setup** pop-up menu, click **Controller Lane Setup** at the bottom left of the controller display.



The following options are available:

Add Preset

Opens the **Save Preset** dialog that allows you to save a preset and to enter a name for it.

Organize Presets

Opens the **Organize Presets** dialog that allows you to rename and delete presets.

Show Velocity Lane Only

Resets the controller display to show the velocity lane only.

Type of New Controller Events

Allows you to specify whether new controller events should change gradually (**Ramp**) or instantly (**Step**) from the previous curve point to the new one.

NOTE

This setting is saved with the program and affects new events that you create manually as well as recorded MIDI CC events. The following events, however, will be always recorded as steps:

- CC 0 (BankSel MSB)
- CC 32 (BankSel LSB)
- CC 64 (Sustain)
- CC 98 (NRPN LSB)
- CC 99 (NRPN MSB)
- CC 100 (RPN LSB)
- CC 101 (RPN MSB)
- CC 120 (AllSndOff)
- CC 121 (Reset Ctrl)
- CC 122 (Local Ctrl)
- CC 123 (AllNoteOff)
- CC 124 (Omni Mode Off)
- CC 125 (Omni Mode On)
- CC 126 (Mono Mode On)
- CC 127 (Poly Mode On)
- All MIDI CC events that are recorded on tracks with the output channel set to **Any**.
- All MIDI CC events for which **Record MIDI as Note Expression** is enabled.

Set up Available Controllers

Opens the **MIDI Controller Setup** dialog that allows you to specify which MIDI controllers are visible/hidden in the pop-up menu.

Show/Hide Controller Lanes

Shows/Hides the last displayed controller lanes.

Controller Lane Context Menu

- To open the controller lane context menu, right-click in the left area of the controller display.

The following options are available:

Create Controller Lane

Creates a controller lane.

Remove This Lane

Removes the current controller lane.

Select All Events on Lane

Selects all controller events on the current lane.

Cut

Cuts the selected events.

Copy

Copies the selected events to the clipboard.

Paste

Pastes the clipboard data at the cursor position.

Paste at Origin

Pastes the clipboard data back at its original position. Existing events are replaced.

NOTE

You can copy data between different CC lanes.

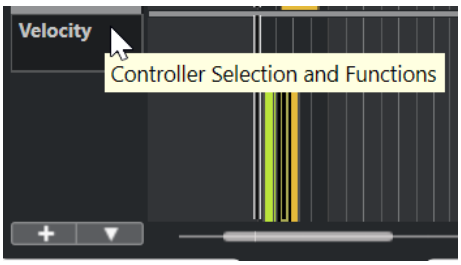
RELATED LINKS

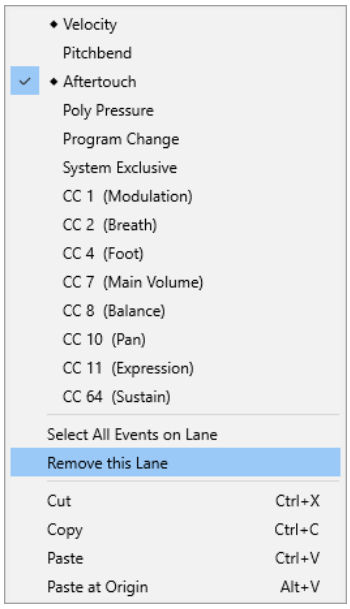
Controller Display on page 789

Controller Selection and Functions Menu

The **Controller Selection and Functions** pop-up menu that is shown to the left of a controller lane allows you to select the displayed controller type. This pop-up menu is only available if at least one controller lane is shown. It also contains editing functions for controller lanes and events.

- To open the **Controller Selection and Functions** pop-up menu, click **Controller Selection and Functions** to the left of a controller lane.





The following options are available:

Controller event types

Lists the event types that you can display on the controller lanes. If automation data already exists for a controller, this is indicated by a rhombus that is displayed to the left of the controller name.

Select All Events on Lane

Selects all controller events on the current lane.

Remove This Lane

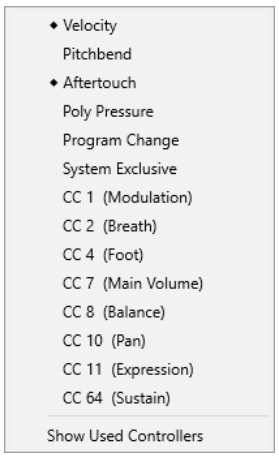
Hides the current controller lane from view.

RELATED LINKS
MIDI Controller Setup Dialog on page 797

Create Controller Lane Menu

The **Create Controller Lane** pop-up menu allows you to create a new controller lane and to select which controller type is displayed.

- To open the **Create Controller Lane** pop-up menu, click **Create Controller Lane** + to the left of the controller display.



The following options are available:

Controller event types

Lists the event types that you can display on the controller lanes. If automation data already exists for a controller, this is indicated by a rhombus that is displayed to the left of the controller name.

Select an event type to add the corresponding controller lane to the controller display.

Show Used Controllers

Opens all controller lanes that have controller events.

Adding Controller Lanes

You can add controller lanes to the controller display. Controller lanes allow you to select a specific controller type for display, so that you can add and edit controller events of that type.

PROCEDURE

1. Click **Create Controller Lane** .
2. Select the controller event type from the pop-up menu.

   NOTE

   If the controller event type that you want to show is not available, open the **Controller Lane Setup** pop-up menu, and select **Set up Available Controllers**. You can then set up the available controller event types in the **MIDI Controller Setup** dialog.

RESULT

A new controller lane is created.

NOTE

- To hide a controller lane from view, open the **Controller Selection and Functions** pop-up menu, and select **Remove This Lane**. This does not affect the events in any way.
- If you hide all lanes, the controller display is hidden. You can bring it back by clicking **Create Controller Lane** or by opening the **Controller Lane Setup** pop-up menu and selecting **Show/Hide Controller Lanes**.

RELATED LINKS

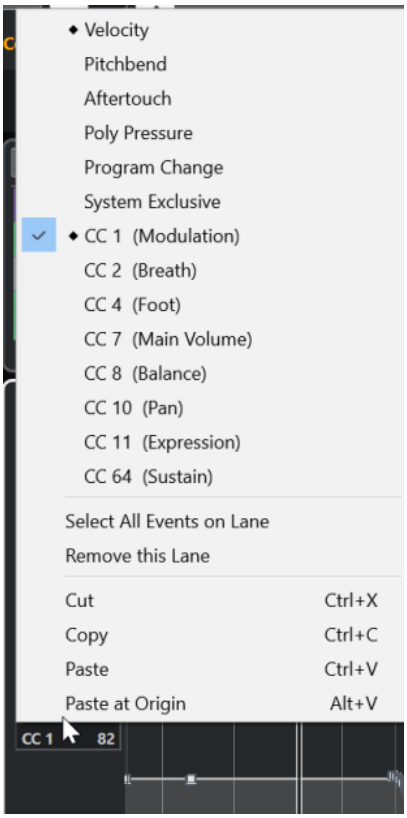
Controller Selection and Functions Menu on page 793
Setting up Available Continuous Controllers on page 796

Displaying a Different Controller Event Type

You can select which event type to display on a controller lane. Each controller lane shows one event type at a time.

PROCEDURE

- Open the **Controller Selection and Functions** pop-up menu, and select a different event type.



RELATED LINKS
Controller Selection and Functions Menu on page 793

Setting up Available Continuous Controllers

In the **MIDI Controller Setup** dialog, you can specify which continuous controllers are available for selection.

PROCEDURE

1. Select **Controller Lane Setup** > **Set up Available Controllers**.
2. In the **MIDI Controller Setup** dialog, do one of the following:
   - In the **Hidden** column, select all controllers that you want to show, and click **Add**.
   - In the **Visible** column, select all controllers that you want to hide, and click **Remove**.
3. Click **OK**.

RESULT

The corresponding continuous controllers are now available for selection.

NOTE

The **MIDI Controller Setup** dialog is available in different areas of 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.

RELATED LINKS
Setting up Available Continuous Controllers on page 796

MIDI Controller Setup Dialog

The **MIDI Controller Setup** dialog allows you to specify which MIDI controllers are visible/hidden.

- To open the **MIDI Controller Setup** dialog, click **Controller Lane Setup** to the left of the controller display, and select **Set up Available Controllers**.

Visible

Lists the MIDI controllers that are visible.

Hidden

Lists the MIDI controllers that are hidden.

Add >>

Select an item from the **Hidden** list, and click **Add >>** to make it visible.

<< Remove

Select an item from the **Visible** list, and click **<< Remove** to hide it.

Saving Controller Lane Presets

You can save a controller lane setup as a controller lane preset. This way, 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.

PREREQUISITE

You have added at least one controller lane and selected a controller event type for display.

PROCEDURE

1. Click **Controller Lane Setup**.
2. Select **Add Preset**.
3. In the **Save Preset** dialog, enter a name for the preset.
4. Click **OK**.

RESULT

Your controller lane setup is now available as a controller lane preset. The number of lanes and the displayed event types are saved in the preset.

To load, remove, or rename presets, open the **Controller Lane Setup** menu, and select **Organize Presets**.

RELATED LINKS

Controller Lane Setup Menu on page 791

Editing Velocity Events

Each note event automatically gets a velocity event. You can edit the velocity values of these events.

PREREQUISITE

You have added a controller lane and set it up to display velocity events. You have added velocity events for several notes.

PROCEDURE

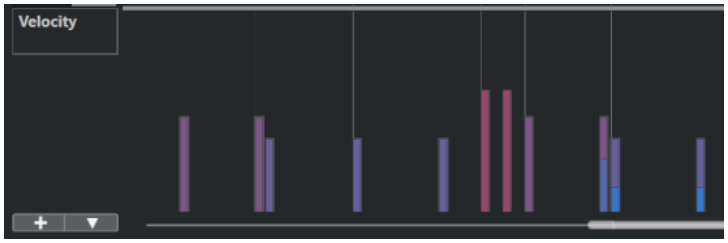
1. Optional: On the toolbar, activate **Acoustic Feedback**.

   This plays back the notes when you adjust the velocity so that you can audition your changes.

2. Do one of the following:

   - On the toolbar, select the **Object Selection** or the **Draw** tool, and click a velocity bar in the controller display.
   - On the toolbar, select the **Object Selection** tool, press **Alt**, and click a velocity bar in the controller display to select it. Change the **Velocity** value on the info line.
   - On the toolbar, select the **Line** tool, and drag in the velocity display to change the velocity values of several notes.

   The velocity value at the project cursor position is displayed below the **Controller Selection and Functions** pop-up menu.



NOTE

If there is more than one note at the same position, their velocity bars overlap. To edit the velocity of a single note, select the note in the note display. If no note is selected, all velocity events assume the same velocity value.

RESULT

The velocity values change according to your edits.

RELATED LINKS

Adding Velocity Events on page 799

Controller Selection and Functions Menu on page 793
Controller Event Editor on page 811

Adding Velocity Events

You can add velocity events by adding note events.

PREREQUISITE

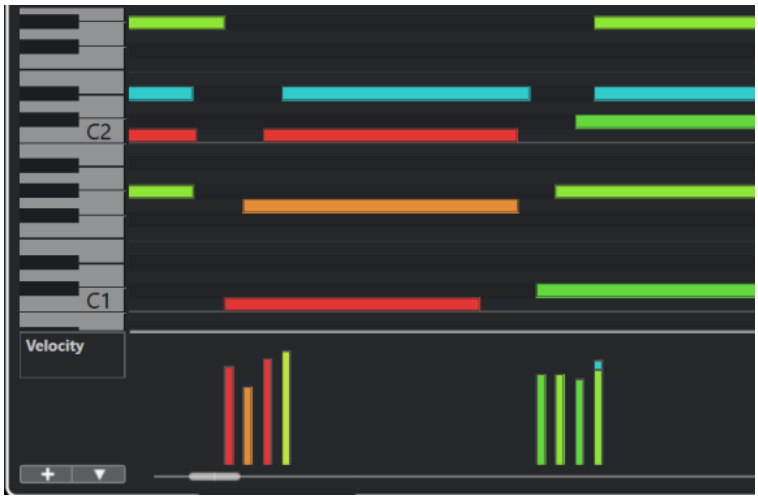
You have added a controller lane.

PROCEDURE

1. Open the **Controller Selection and Functions** pop-up menu, and select **Velocity**.
2. Select the **Draw** tool or the **Line** tool.
3. Click in the note display to add a note event.
   This adds a note event and a velocity controller event that you can edit.

RESULT

The 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. The value is valid until the beginning of the next event.



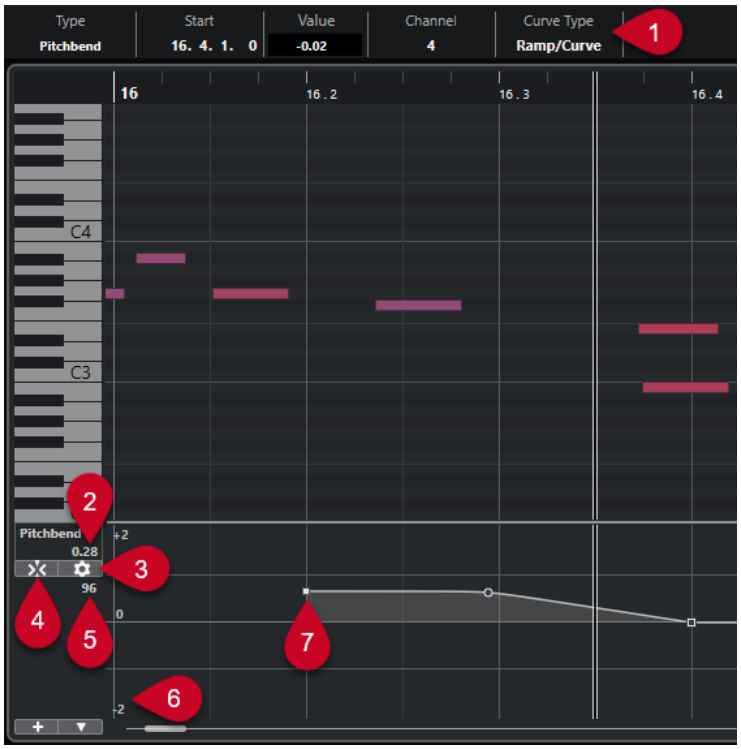
RELATED LINKS

Adding Controller Lanes on page 795
Line Tool Modes on page 810
Controller Selection and Functions Menu on page 793

Pitchbend Controller Lanes

Pitchbend controller lanes allow you to add and edit pitchbend controller events.

- To add a pitchbend controller lane, open the **Controller Selection and Functions** menu, and select **Pitchbend**.



1 Curve Type field

Shows the controller curve type. You can set this to **Step** or to **Ramp/Curve**.

2 Value at project cursor

Displays the pitchbend value at the project cursor position. What is shown depends on the **Show Semitones Grid** setting in the **Grid Settings** pane:

- If **Show Semitones Grid** is activated, this value shows the semitones value at the project cursor position. The range goes from +96 semitones to -96 semitones. The value is shown in semitones and cents.
- If **Show Semitones Grid** is deactivated, this value shows the pitchbend MIDI value at the project cursor position. The range goes from +8191 steps to -8192 steps.

3 Set up Grid

Opens the **Grid Settings** pane that allows you to set up the semitones grid for the pitchbend controller lane.

4 Snap Pitchbend Events

Restricts vertical movement and the positioning of controller events to the semitones grid. By default, activating **Snap Pitchbend Events** also activates **Show Semitones Grid** to show the grid that the events are snapping to.

NOTE

Snap Pitchbend Events is not effective in the controller event editor.

5 Controller value from MIDI device

This value shows up if you input MIDI data for this controller lane from your MIDI device.

6 Semitones grid

The semitones grid shows the semitone values. The amount of grid lines and their width depends on the settings for **Pitchbend Range: Down** and **Pitchbend Range: Up**. By default, the range is set to +/- 2 semitones, that is, a major second.

NOTE

You can show the grid, even if **Snap Pitchbend Events** is deactivated.

7 Controller curve

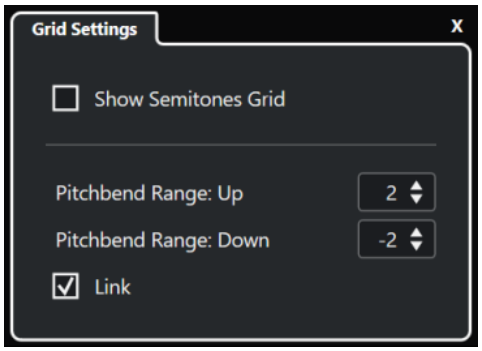
The pitchbend controller curve.

RELATED LINKS
Controller Event Editor on page 811
Grid Settings on page 801

Grid Settings

The **Grid Settings** pane allows you to set up a semitones grid for the pitchbend controller lane. As grid settings only affect the corresponding track, you can set up different grid settings for different MIDI or instrument tracks. All grid settings are saved with the project.

- To show the **Grid Settings** for pitchbend controller lanes, add a pitchbend controller lane, and click **Set up Grid**.



Show Semitones Grid

The semitones grid shows the semitone values that the events snap to. The amount of grid lines and their width depend on the settings for **Pitchbend Range: Down** and **Pitchbend Range: Up**.

NOTE

The grid is a visual help that allows you to find exact semitone positions for pitchbends more easily. Changing the grid does not change the values of pitchbend events.

Pitchbend Range: Up

Allows you to specify a value between 1 and 96 semitones for the upper grid. By default, the upper pitchbend range for the grid is set to 2 semitones, allowing you to specify upward bends from 1 to up to 2 semitones.

Pitchbend Range: Down

Allows you to specify a value between 1 and -96 semitones for the lower grid. By default, the lower pitchbend range for the grid is set to -2 semitones, allowing you to specify downward bends from 1 to up to -2 semitones.

Link

Allows you to link the pitchbend ranges. You can deactivate this, to set up a higher value for the upper range than for the lower range, for example.

NOTE

The actual pitchbend range depends on the settings of the VST or MIDI instrument and the sound or preset that you are using. To make the most of this feature, make sure to adjust the pitchbend range settings of your instrument to the settings of the pitchbend controller lane, or vice versa.

RELATED LINKS
Pitchbend Controller Lanes on page 799

Adding Pitchbend Events

You can add pitchbend events to your note events.

PROCEDURE

1. Open the **Create Controller Lane** pop-up menu, and select **Pitchbend**.
2. Optional: Click **Set up Grid** to open the **Grid Settings** pane, and set up the grid according to your needs.
3. Optional: Activate **Snap Pitchbend Events** to snap the pitchbend controller events to the set grid.
4. Select the **Draw** tool, and click in the controller display to enter as many pitchbend events as you need.

RESULT

The pitchbend controller events are added.

RELATED LINKS
Pitchbend Controller Lanes on page 799
Create Controller Lane Menu on page 794
Grid Settings on page 801
Creating Smooth Transitions between Continuous Controller Events on page 805
Editing Pitchbend Events on page 802

Editing Pitchbend Events

PREREQUISITE

You have added a pitchbend controller lane and pitchbend events.

PROCEDURE

1. On the toolbar, select the **Object Selection** tool.
2. Optional: Click **Set up Grid** to open the **Grid Settings** pane, and set up the grid according to your needs.
3. In the controller display, move the mouse pointer over a pitchbend controller event.

   The mouse pointer turns into a pointing hand symbol.

   NOTE

   You can create smooth transitions between the pitchbend controller events by selecting a pitchbend controller event, switching the **Curve Type**, on the info line to **Ramp/Curve** and editing the curve handles.

4. Click the pitchbend controller event to select it, and drag it to another position.

RELATED LINKS
Grid Settings on page 801
Adding Pitchbend Events on page 802
Pitchbend Controller Lanes on page 799

Adding Poly Pressure Events

You can add poly pressure events to your note events. Poly pressure events are events that belong to a specific note number, that is, key. For each poly pressure event, you can edit the note number and the amount of pressure.

PROCEDURE

1. Click **Create Controller Lane** .
2. Select **Poly Pressure** from the menu.

   A **Poly Pressure** controller lane is added. It shows a note number value field to the left of the controller display.
3. Do one of the following:
   - Select a note event in the note display to set the note number for the corresponding pitch. This only works for the topmost of several poly pressure controller lanes.
   - If you work with several poly pressure controller lanes, use the pop-up menu in the note number value field to the left of the controller display to select the note pitch for that controller lane.

   The selected note number is displayed in the upper value field, to the left of the controller display.
4. On the toolbar, select the **Draw** tool, and add a new poly pressure event.

   You can determine the value by moving the mouse up or down in the controller display.

AFTER COMPLETING THIS TASK

Select a different note number, and add poly pressure events for this.

RELATED LINKS
Controller Selection and Functions Menu on page 793

Editing Poly Pressure Events

PREREQUISITE

You have added a controller lane and set it up to display poly pressure events. You have added poly pressure events for several note numbers.

PROCEDURE

1. Click the arrow button next to the note number, to the left of the controller lane.

   A pop-up menu with a list of all note numbers for which you inserted poly pressure events opens.
2. Select a note number from the pop-up menu.

   The poly pressure events for the selected note number are shown in the controller lane.

3. On the toolbar, select the **Draw** tool.
4. Hold down **Ctrl/Cmd** - **Alt/Opt**, and edit the events in the controller display.

RELATED LINKS
Adding Poly Pressure Events on page 803

Adding Continuous Controllers

You can add continuous controllers to your note events.

PREREQUISITE

You have added a controller lane.

PROCEDURE

1. Open the **Controller Selection and Functions** pop-up menu, and select a continuous controller.
2. Select the **Draw** tool or the **Line** tool.
3. Do one of the following:
   - To add a single event, click in the controller display.
   - To add multiple events, click and drag in the controller display.
   - To add a **Modulation (CC 1)** event, copy note events from the **Key Editor** note display, and paste them on a controller lane in the controller display.

   When you move the **Draw** tool on the controller lane, a tooltip shows the position and the controller value at the mouse position.

RESULT

The added events correspond to the event values. The beginning of an event is marked by a curve point. Controller events have no length. The value of a controller event in the display is valid until the beginning of the next controller event.

RELATED LINKS
Adding Controller Lanes on page 795
Line Tool Modes on page 810
Controller Selection and Functions Menu on page 793

Editing Continuous Controllers

You can edit the values of the continuous controller events that you added or recorded.

PREREQUISITE

You have added a controller lane and set it up to display controller events. You have added controller events for several notes.

PROCEDURE

1. On the toolbar, select the **Object Selection**, the **Draw** or the **Line** tool.
2. Do one of the following:
   - If you selected the **Draw**, or the **Line** tool, drag in the controller display.

- If you selected the **Object Selection** tool, press **Alt** and drag in the controller display.

RESULT

The controller event is edited.

RELATED LINKS

Line Tool Modes on page 810

Creating Smooth Transitions between Continuous Controller Events

By default, when recording or drawing MIDI continuous controller events, these are inserted as steps. If this is not what you want, you can create smooth transitions between the events.

PREREQUISITE

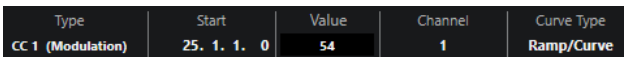
You have recorded MIDI data with continuous controller events.

PROCEDURE

1. In the **Project** window, double-click the MIDI part.
2. In the **Key Editor**, open the **Create Controller Lane** menu, and select **Show Used Controllers**.

   The controller lanes for all controller events that you have recorded are shown in the controller display.
3. Locate the controller lane of the continuous controller that you want to edit, and select a controller event.

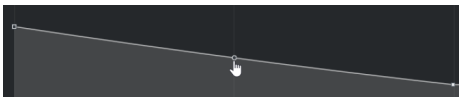
   The info line of the **Key Editor** displays information about the selected controller event, such as **Type**, **Start** position, **Value**, **Channel**, and **Curve Type**.



4. Do one of the following:
   - On the info line, change the option in the **Curve Type** field from **Step** to **Ramp/Curve**.

     NOTE

     You can change the curve type for several controller events by selecting them and changing the value in the **Curve Type** field.
   - In the controller display, move the mouse pointer between two controller events, and double-click the handle that appears to change the curve type from **Step** to **Ramp/Curve**.
5. Move the mouse pointer over the ramp, click the handle, and move it upwards or downwards to convert the ramp into a curve shape.



RESULT

The ramp turns into a curve.

When you play back ramps/curves, the data between two MIDI continuous controller events is interpolated to a suitable MIDI data resolution. You can visualize this by selecting **MIDI** > **Merge MIDI in Loop** or **MIDI** > **Freeze MIDI Modifiers**, or by exporting the part as a MIDI file.

NOTE

Ramp/Curve controller curves are demanding on the performance of the application.

AFTER COMPLETING THIS TASK

You can use the controller lane context menu to cut, copy, and paste controller events.

RELATED LINKS

Controller Lane Context Menu on page 792

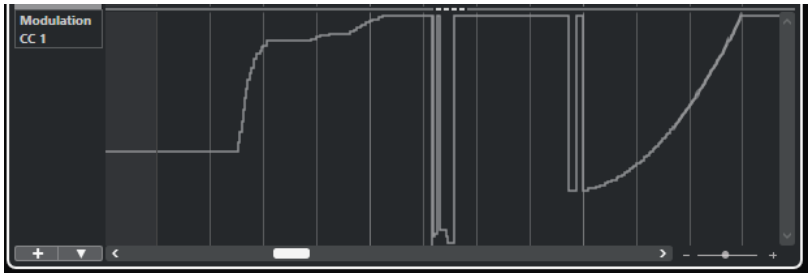
Continuous Controllers and MIDI Automation

You can record or enter MIDI controller data for a MIDI part in the controller lane, or for an automation track in the **Project** window.

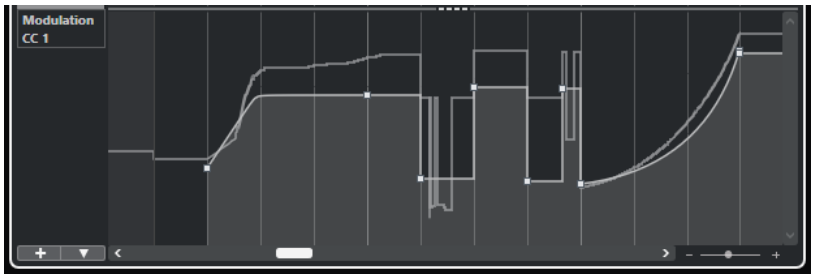
To show and edit MIDI controller data on the automation track, you must extract the MIDI automation from the MIDI part.

MIDI controller data from the automation track is also displayed on the controller lane. However, you cannot edit this data on the controller lane.

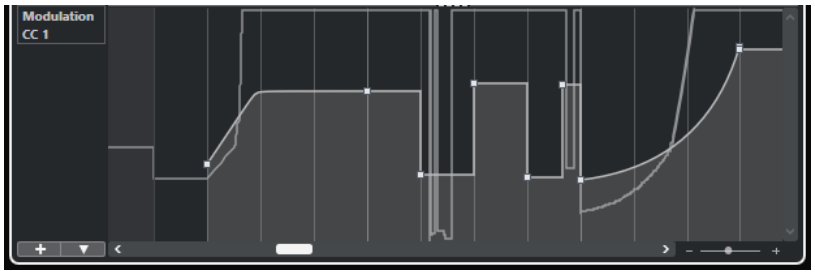
If you notice conflicting controller data, specify what should happen on playback by selecting an **Automation Merge Mode** in the **MIDI Controller Automation Setup** dialog. The resulting curve depends on the automation merge mode.



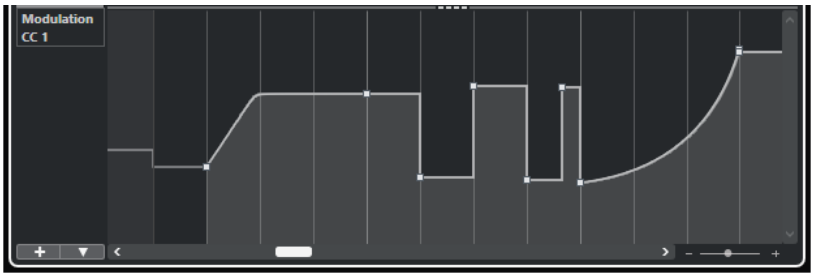
MIDI controller data from the automation track shown on the controller lane



Conflicting controller data, **Automation Merge Mode** set to **Average**



Conflicting controller data, **Automation Merge Mode** set to **Modulation**



Conflicting controller data, **Automation Merge Mode** set to **Replace 1 - Part Range**

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.

RELATED LINKS
Extracting MIDI Automation on page 777
Automation Merge Modes on page 809
MIDI Controller Automation on page 807

MIDI Part Data vs. Track Automation

You can enter or record MIDI controller data as automation data on an automation track or as part data in the MIDI part.

- If **Read Automation** for a track is enabled, controller data is written as automation data on an automation track in the **Project** window.
- If **Read Automation** is disabled, the controller data is written in the MIDI part and can be viewed and edited for example in the **Key Editor**.

Nevertheless, you can end up with both kinds of controller data for a MIDI part if you recorded controller part data in one pass and automation data during another. In this case, these conflicting data types are combined during playback as follows:

- 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 breakpoint is reached on the automation track.

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.

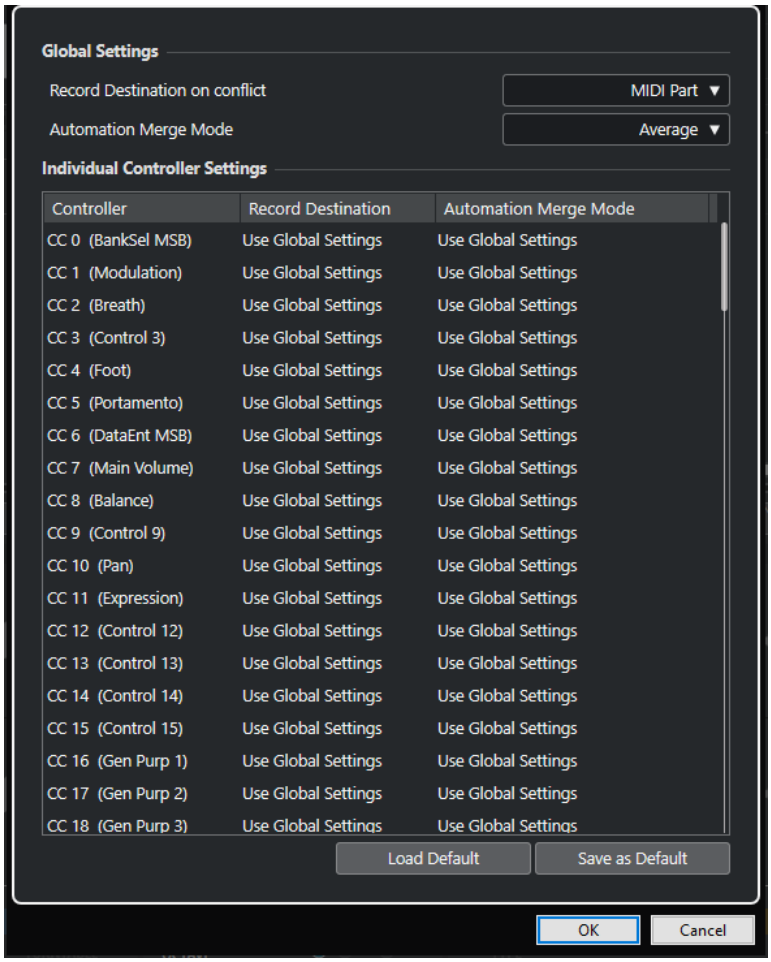
If this results in conflicting automation data, you can specify how the individual data is combined during playback. To do so, select an **Automation Merge Mode** from the track list for the automation track.

RELATED LINKS
MIDI Controller Automation Setup Dialog on page 808
Automation Merge Modes on page 809

MIDI Controller Automation Setup Dialog

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.

- To open the **MIDI Controller Automation Setup** dialog, select **MIDI** > **CC Automation Setup**.



Record Destination on Conflict (global)

Allows you to determine which destination is used if MIDI controller data is received by Cubase, with both the **Record** and the **Write Automation** buttons 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 that allow for the separate specification of the record destination and the merge mode for automation. 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 a pop-up menu that allows you to choose where you want recorded data of this particular MIDI controller to be saved.

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 are used.

Load Default

Allows you to load the default settings.

RELATED LINKS
Automation Merge Modes on page 809
MIDI Controller Automation on page 807

Automation Merge Modes

Automation Merge Modes in the **MIDI Controller Automation Setup** dialog are only available for controllers that can be recorded both for a part and a track.

- To open the **MIDI Controller Automation Setup** dialog, select **MIDI** > **CC Automation Setup**.

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. At the left and right part borders, for example, the automation mode switches abruptly from part to track automation, and vice versa.

Replace 2 - Last Value Continues

Similar to **Replace 1 - Part Range**, but part automation only begins on reaching the first controller event within the part. 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 are used.

Modulation

In this mode, the automation track curve modulates the existing part automation, with higher curve points emphasizing the automation values and with lower curve points reducing the automation values even further.

NOTE

The settings that you make for a controller are applied to all MIDI tracks that use this controller.

RELATED LINKS
MIDI Controller Automation on page 807
MIDI Controller Automation Setup Dialog on page 808

Line Tool Modes

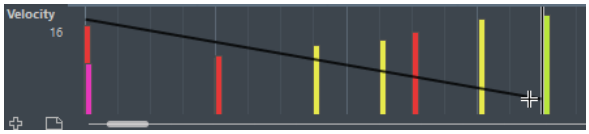
You can use the different **Line** tool modes to edit controller events.

- To select a line mode, click the **Line** tool on the **Key Editor** or the **Drum Editor** toolbar, and click again to open a pop-up menu with the available modes.

The following modes are available:

Line

In this mode, you can draw events in a straight line by clicking in the controller display and dragging the cursor to where you want the ramp to end.

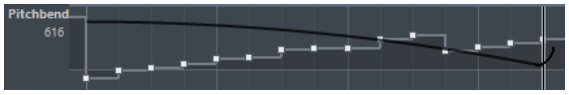


NOTE

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**. Beware that very dense controller curves can cause MIDI playback to stutter.

Parabola

In this mode, you can draw events on a parabola curve. This results in more natural curves and fades.



You can use modifier keys to determine the shape of the parabola curve.

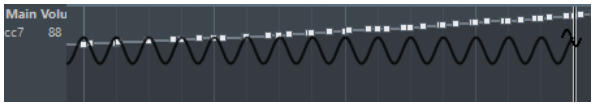
- To reverse the parabola curve, press **Ctrl/Cmd**.
- To change the position of the whole curve, press **Alt/Opt**.
- To increase or decrease the exponent, press **Shift**.

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**. Beware that very dense controller curves can cause MIDI playback to stutter.

Sine, Triangle, and Square

These modes create different periodic waveform curves.



The quantize value determines the period of the curve that is the length of one curve cycle. The **Length Quantize** value determines the density of the events.

NOTE

If you set **Length Quantize** to **Quantize Link** and 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/Opt**-**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 resulting period length is a multiple of the quantize value.

Paint

In this mode, you can draw in multiple notes.

NOTE

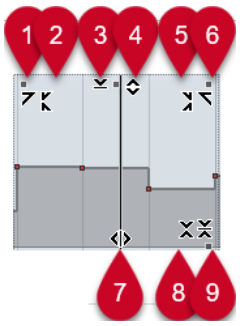
If **Snap** is activated, the **Length Quantize** value determines the density of the created controller curves. For very smooth curves, use a small **Length Quantize** value or deactivate **Snap**. Beware that very dense controller curves can cause MIDI playback to stutter.

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** or the **Range Selection** tool, and drag a selection rectangle on the controller lane.
- To open the controller event editor for velocity lanes, select multiple MIDI notes in the note display. You can also activate the **Object Selection** or the **Range Selection** tool, press **Alt**, 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/Opt**-click in the upper left corner of the editor, you can compress or expand 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/Opt**-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 **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.

8 **Scale Around Absolute Center**

If you click in the center of the 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 **Scale Around Relative Center**

If you **Alt/Opt**-click in the center of the right border 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.

RELATED LINKS
Controller Selection and Functions Menu on page 793
Selection Range Editing Specifics on page 216
Editing Velocity Events on page 798

Auto Select Controllers

Auto Select Controllers automatically selects controller data of the selected MIDI notes. This is useful, as selected controllers for notes are moved together with the corresponding notes.

- To show **Auto Select Controllers**, right-click the **Key Editor** or the **Drum Editor** toolbar, and select **Auto Select Controllers**.

If you activate **Auto Select Controllers**, controllers that belong to a note event are automatically selected when you select the note event.

RELATED LINKS
Key Editor Toolbar on page 815

Moving Events in the Controller Display

You can move events of a controller curve in the controller display. This only works for curve type controller events, such as continuous controllers, pitchbend, aftertouch, poly pressure, and program change.

PROCEDURE

1. Do one of the following:
   - With the **Object Selection** or the **Range Selection** tool, drag to create a selection rectangle that encompasses the events that you want to move.
   - On the toolbar, activate **Auto Select Controllers**. In the note display, select the notes whose controllers you want to move.
   - In the note display, select the notes whose controllers you want to move, and select **Edit** > **Select** > **Select Controllers in Note Range** to select the controllers within the range of the selected notes.
2. Move the note/controller events.

RESULT

The controller events are moved to the new position. Snap is taken into account.

RELATED LINKS

Select Controllers in Note Range: Use Extended Note Context on page 1131
Selection Range Editing Specifics on page 216

Copying and Pasting Events between Controller Lanes

You can copy events from a controller lane and paste them onto another controller lane. The controller events must have the same event type.

PROCEDURE

1. Do one of the following:
   - With the **Object Selection** or the **Range Selection** tool, drag to create a selection rectangle that encompasses the events that you want to copy.
   - On the toolbar, activate **Auto Select Controllers**. In the note display, select the notes whose controllers you want to copy.
   - In the note display, select the notes whose controllers you want to copy, and select **Edit** > **Select** > **Select Controllers in Note Range** to select the controllers within the range of the selected notes.
2. Press **Ctrl/Cmd** - **C** to copy the note/controller events.
3. Select the controller lane where you want to paste the events, and press **Ctrl/Cmd** - **V**.

RESULT

The controller events are pasted onto the controller lane. Snap is taken into account.

RELATED LINKS

Displaying a Different Controller Event Type on page 795

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 a tab 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.

NOTE

Some features are only available in the **Key Editor** window.

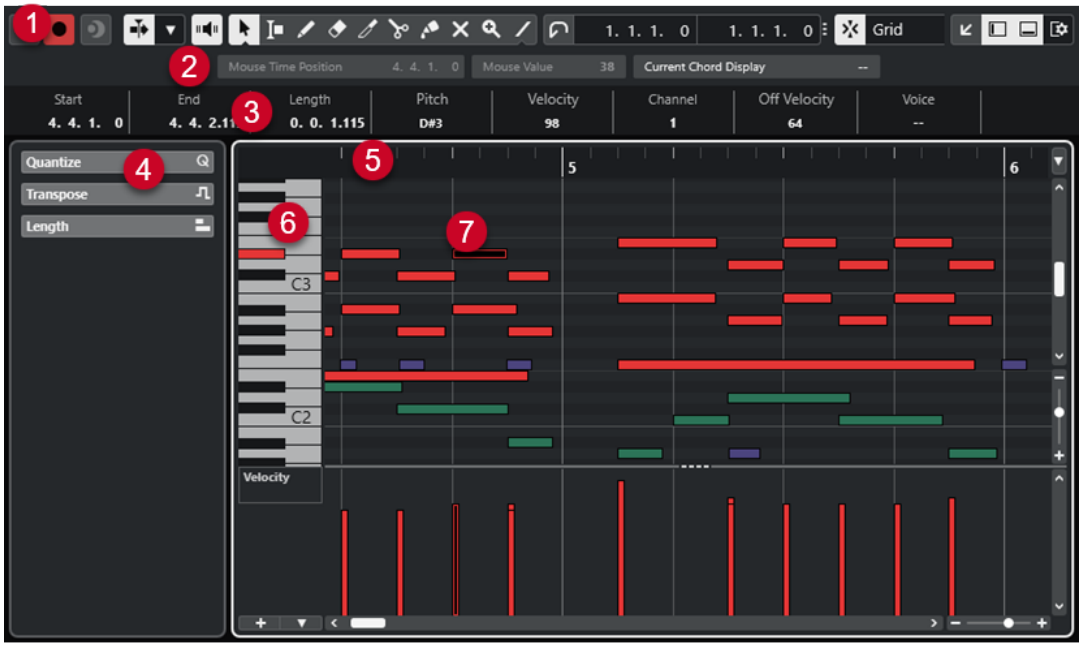
To open a MIDI part in the **Key Editor**, do one of the following:

- 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 changes to specify if you want the editors to open in a separate window or in the lower zone of the **Project** window.

The **Key Editor** window:



The **Key Editor** is divided into several sections:

1 Toolbar

Contains tools and settings.

2 Status line

Informs you about the mouse time position, the mouse value, and the current chord.

3 **Info line**

Displays note event information about a selected MIDI note.

4 **Left Zone** (**Key Editor Inspector**)

Contains tools and functions for working with MIDI data.

5 **Ruler**

Displays the timeline.

6 **Piano keyboard display**

Helps you to find the right note number.

7 **Note display**

Contains a grid in which MIDI notes are displayed as boxes.

8 **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.

RELATED LINKS
Key Editor Toolbar on page 815
Key Editor Status Line on page 822
Key Editor Inspector on page 824
Key Editor Note Display on page 826
Key Editor Piano Keyboard Display on page 827
Controller Display on page 789

Key Editor 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.

Default Items

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 with **MIDI Record Mode** set to **Merge** or **Replace**.

Retrospective Record

Insert MIDI Retrospective Recording in Editor

Allows you to recover MIDI notes that you played in stop mode or 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.

Pitch Visibility

Pitch Visibility On/Off

Deactivate this to show all pitches in the note display. Activate this to reduce the pitches in the note display according to the selected pitch visibility option.

Select Pitch Visibility Options

Allows you to determine which pitches are displayed in the note display:

- **Show Pitches with Events** shows only the pitches for which events are available in the note display.
- **Show Pitches from Scale Assistant** shows only the pitches that match the musical scale that is selected in the **Scale Assistant** section of the **Inspector**.

Auto-Scroll

Link Project and Lower Zone Editor Cursors

Links timelines, cursors, and zoom factors of the **Editor** tab in the lower zone 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.

Select Auto-Scroll Settings

Allows you to activate **Page Scroll** or **Stationary Cursor** and to activate **Suspend Auto-Scroll When Editing**.

Acoustic Feedback

Acoustic Feedback

Automatically plays back events when you move or transpose them, or when you create them by drawing.

Tool Buttons

Object Selection

Selects events and parts.

Range Selection

Selects ranges.

Draw

Draws events.

Erase

Deletes events.

Trim

Trims events.

Split

Splits events.

Glue

Glues together events of the same pitch.

Mute

Mutes events.

Zoom

Zooms in. Hold **Alt/Opt**, and click to zoom out.

Line

Creates a series of continuous events.

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 **Editor** tab in the lower zone.

Show Note Expression Data

Double-click Opens Note Expression Editor

Opens the note expression editor when you double-click a note event.

Show Note Expression Data

Shows note expression data.

Indicate Transpositions

Indicate Transpositions

Allows you to display the transposed pitches of MIDI notes.

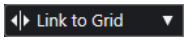
Insert Velocity

Note Insert Velocity

Allows you to specify a velocity value for new notes.

Nudge

Nudge Settings



Allow you to set up a snap grid for the nudge commands.

- By default, the snap grid for nudge operations is set to **Link to Grid**, and the step width corresponds to the snap grid.
- If you activate **Link to Primary Time Format**, the snap grid for nudge operations follows the primary time format, and you can set up the step width in the **Nudge Settings** pop-up menu.
- If you deactivate **Link to Grid** and **Link to Primary Time Format**, you can set up an independent snap grid for nudge operations. In this case, you can select a time format and a value from the **Nudge Settings** pop-up menu.

NOTE

To display the nudge buttons, click the points to the right of the **Nudge Settings**.

Nudge Start Left

Increases the length of the selected event by moving its start to the left.

Nudge 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.

Nudge End Left

Decreases the length of the selected event by moving its end to the left.

Nudge 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 to the end of other events.
- **Shuffle** changes the order of events, if you drag one event to the left or to the right of other events.
- **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 to the 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 to the end of other events, or to the cursor position.

Grid Type

Allows you to choose from one of the following grid types:

- **Use Quantize** activates a grid where events snap to the value that is selected in the **Quantize Presets** pop-up menu.
- **Adapt to Zoom** activates a grid where events snap to the zoom level.

Quantize

Apply Quantize

Applies the quantize settings.

Quantize Presets

Allows you to select a quantize or a groove preset.

Soft Quantize On/Off

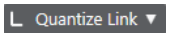
Activates/Deactivates soft quantize.

Open Quantize Panel

Opens the **Quantize Panel**.

Length Quantize

Length Quantize



Allows you to set a value for quantizing event lengths.

Multiple Part Controls

Show Part Borders

Shows/Hides part borders for the active MIDI part within the left and right locators.

Part Editing Mode

Sets the editing mode for parts.

- **All Parts** allows you to select and edit all events of all visible parts.
- **Active Part** restricts selecting and editing to events of the active part.

Activate Part for Editing

Lists all parts that were selected when you opened the editor and allows you to activate a part.

Step/MIDI Input

Step Input

Activates/Deactivates step input.

MIDI Step Input/Note Expression MIDI Input

Activates/Deactivates MIDI step input and note expression MIDI input.

Move Insert Mode

Moves all note events to the right of the step input cursor 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.

Keep Existing Notes

Keeps existing notes 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 **Editor** tab in the lower zone. It opens the editor in a separate window.

Open in Lower Zone

This button is available in the editor window. It opens the **Editor** tab in the lower zone of the **Project** window.

Show/Hide Left Zone

Shows/Hides the left zone.

Show/Hide Controller Lanes

Shows/Hides the controller lanes.

Set up Window Layout

Allows you to set up the window layout.

RELATED LINKS
Zooming in MIDI Editors on page 780
Part Editing Mode Pane on page 788

Key Editor Status Line

The **Key Editor** status line shows information about the mouse time position, the mouse value, and the current chord.

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

The on/off status of the status line in the **Key Editor** window and in the **Editor** tab in the lower zone of the **Project** window are independent of each other.

Mouse Time Position

Displays the exact time position of the mouse pointer, based on the selected ruler display format. This lets you edit or insert notes at exact positions.

Mouse Value

Displays the exact pitch of the mouse pointer position in the event display. This facilitates finding the right pitch when entering or transposing notes.

If you move the mouse in the controller display, the controller event value is displayed at the mouse cursor position.

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 788

Key Editor Info Line

The **Key Editor** info line shows values and properties of the selected events.

Info Line for Selected Note Events

- To show the info line for note events, select the events with the **Object Selection** tool, click **Set up Window Layout** on the toolbar, and activate **Info Line**.
- NOTE

  If several notes are selected, the values for the first note are displayed in color.

The values for **Start**, **End**, and **Length** are displayed in the selected ruler display format.

The values for **Velocity** and **Off Velocity** can be displayed in high resolution. In the **Preferences** dialog (**Editing—MIDI** page), set up the **High Resolution Display Range** and the **High Resolution Decimal Count**.

NOTE

The on/off status of the info line in the **Key Editor** window and on the **Editor** tab in the lower zone of the **Project** window are independent of each other.

Info Line for Selected Ranges

- To show the info line for a selected range, select a range with the **Range Selection** tool, click **Set up Window Layout** on the toolbar, and activate **Info Line**.

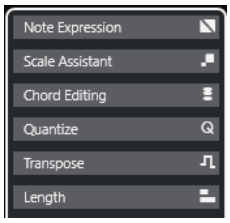
NOTE

The on/off status of the info line in the **Key Editor** window and in the **Editor** tab in the lower zone of the **Project** window are independent of each other.

RELATED LINKS
Editing Note Events on the Info Line on page 786
Changing the Ruler Display Format on page 779
Editing - MIDI on page 1131
Expanding Selection Ranges Vertically (MIDI only) on page 219
Transpose and Velocity on the Info Line on page 757

Key Editor Inspector

The **Inspector** is located left of the note display. The **Key Editor Inspector** contains tools and functions for working with MIDI data.

- To show/hide **Inspector** sections, right-click an empty area, select **Set up Sections**, and activate/deactivate the corresponding options.

Note Expression

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 to change all events of the active part with no events 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 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 exactly reaches the next note. 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 the slider to extend a note up to the next selected note, activate **Extend to Next Selected**.

  This is identical with activating the **Legato Mode: Between Selected Notes Only** option in the **Preferences** dialog.

Scale Assistant

Allows you to select a musical scale that highlights all note events whose pitches belong to this scale.

NOTE

If you open the **Key Editor** in the lower zone, these sections are shown in the **Editor Inspector** in the left zone.

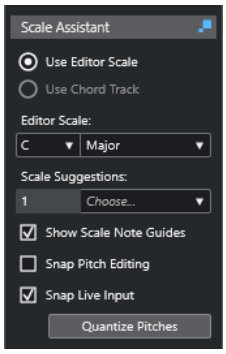
RELATED LINKS

Note Expression Inspector Section on page 903
Quantize Panel on page 299

Transpose Functions on page 329
Opening the Editor Inspector on page 56
Scale Assistant in the Key Editor on page 825

Scale Assistant in the Key Editor

The **Scale Assistant** section of the **Key Editor Inspector** helps you to match note events to a musical scale.



Scale Assistant Status Indicator

Shows the on/off status of the **Scale Assistant**.

Use Editor Scale

Allows you to select a scale for the notes in the **Key Editor** note display.

- **Editor Scale**

  Allows you to select a scale.

- **Scale Suggestions**

  Shows the number of scale suggestions that match the pitches of the MIDI notes. Open the pop-up menu to choose one of the suggestions. To receive scale suggestions for specific notes, select them. If no note is selected, the scale suggestions are made for all notes in the note display.

NOTE

The **Scale Assistant** is also available in the **Sample Editor**, and the **Editor Scale** is linked. If you select a scale in the **Key Editor**, the same scale is selected in the **Sample Editor**, and vice versa.

Use Chord Track

Allows you to use the chord track data as a musical scale.

- **Chord Track Mode**

  Allows you to select whether you want to use the scale events of the chord track, the chord events, or both as a musical scale.

Show Scale Note Guides

Changes the display background of the note event according to the selected scale. Pitches that do not belong to the selected scale are shown with a darker background.

Snap Pitch Editing

Snaps the pitches or the notes to the selected scale when you add, edit, or move them.

NOTE

Snap Pitch Editing does not apply when you change pitches using the **Pitch** value field on the info line or if you record notes via MIDI input.

Snap Live Input

Automatically corrects the pitches of incoming notes according to the selected scale.

NOTE

This only works if **Record in Editor** is activated.

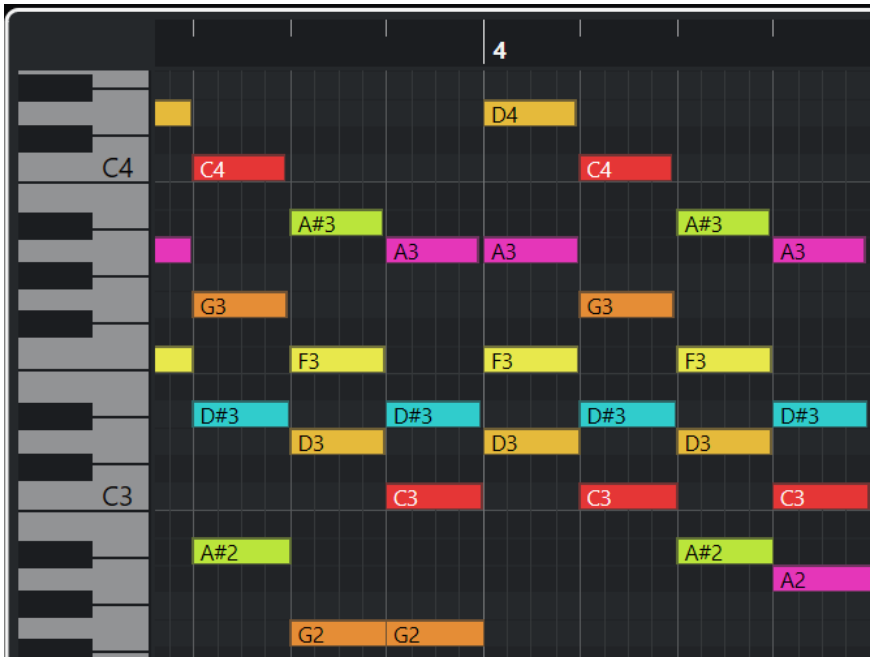
Quantize Pitches

Quantizes the pitches of the selected notes to the nearest pitch of the selected scale.

RELATED LINKS

Key Editor Note Display on page 826
Using Live Input on page 939
Event Colors Menu on page 780
Musical Scale Setup Dialog on page 933
Matching Note Events to a Musical Scale on page 831
Using the Chord Track to Match Note Events to a Musical Scale on page 832
Quantizing MIDI Note Pitches to Musical Scales on page 833
Chord Track on page 922
Mapping Incoming MIDI Note Pitches to Musical Scales on page 833
Snapping MIDI Note Pitches to Musical Scales While Editing on page 834
VariAudio Inspector Section on page 508

Key Editor Note Display

The note display is the main zone 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.

Depending on the zoom factor, the note events show the note names.

NOTE

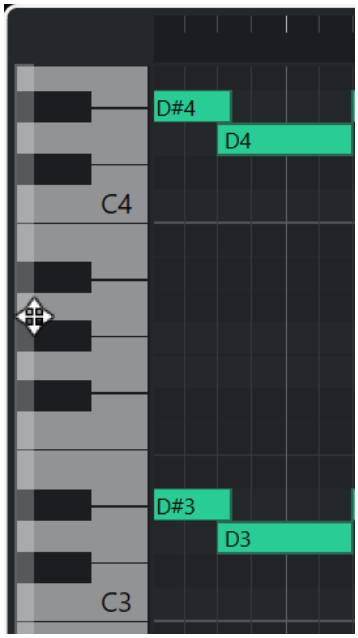
You can change the naming format and the note names of the pitches in the **Pitch Notation** section of the **Preferences** dialog (**Event Display—Chords&Pitches** page).

You can activate **Pitch Visibility On/Off** on the **Key Editor** toolbar, in order to show only the pitches with events or the pitches suggested by the **Scale Assistant**. This hides the keyboard keys whose pitches are not used and displays note names on the remaining keys.

RELATED LINKS
Key Editor Piano Keyboard Display on page 827
Zooming in MIDI Editors on page 780
Pitch Notation on page 1136
Pitch Visibility Options on page 829

Key Editor Piano Keyboard Display

The piano keyboard display is shown to the left of the note display in the **Key Editor**.



The piano keyboard offers you a visual orientation with regard to the pitch positions in the note display and helps you to find specific note pitches.

You can click a key to listen to the pitch and the sound of the connected instrument.

If you move the mouse to the far left of the piano keyboard display, the mouse pointer changes, allowing you to scroll up and down and to zoom in and out of the keyboard display:

- Drag upwards/downwards to scroll up/down in the piano keyboard display.
- Drag to the right/left to zoom in on/out of the piano keyboard display.

The C keys show the note names of the corresponding pitches.

You can activate **Pitch Visibility On/Off** on the **Key Editor** toolbar to show only the pitches with events or the pitches suggested by the **Scale Assistant**. This hides the keyboard keys whose pitches are not used and displays note names on the remaining keys.

NOTE

You can change the naming format and the note names of the pitches in the **Pitch Notation** section of the **Preferences** dialog (**Event Display—Chords&Pitches** page).

If you select note events in the event display, the corresponding keys on the piano keyboard display are shown in the same color as the note event.

NOTE

You can use the **Event Colors** menu in the **Key Editor** toolbar to select a color scheme.

If you move the mouse pointer in the event display, the corresponding pitch position on the piano keyboard display is highlighted.

RELATED LINKS
Key Editor Note Display on page 826
Key Editor on page 814
Pitch Notation on page 1136
Pitch Visibility Options on page 829
Event Colors Menu on page 780

Showing Specific Pitches in the Key Editor

You can define which pitches are visible in the event display and the piano keyboard display of the **Key Editor**. By hiding pitches that you do not need, you can save screen space. This is useful if you add note events that span more than one octave and want to display all of them, for example.

PROCEDURE

1. On the **Key Editor** toolbar, open the **Select Pitch Visibility Options** pop-up menu .
2. Do one of the following:
   - To show only the pitches for which events are available in the note display, select **Show Pitches with Events**.

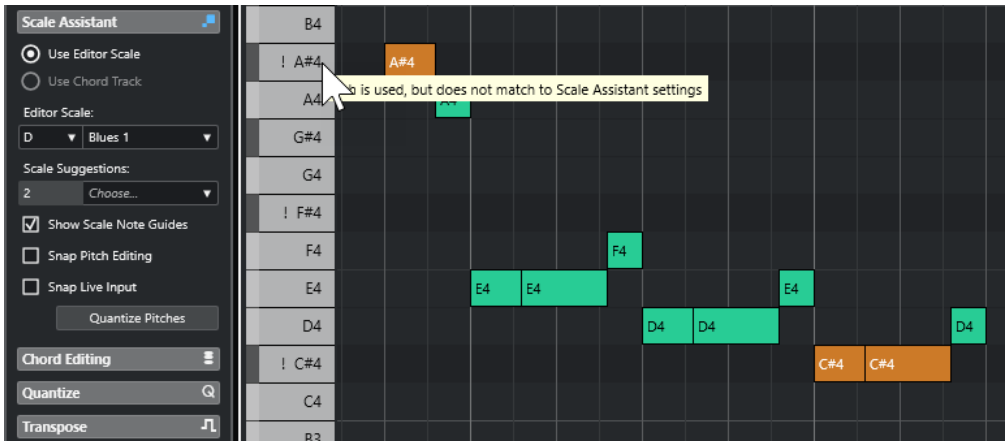
     NOTE

     If you edit multiple MIDI parts, the pitches of all note events in the different MIDI parts are taken into account. The visible pitches are updated according to the MIDI part selection in the **Project** window.
   - To show only the pitches that match the musical scale that is selected in the **Scale Assistant** section of the **Key Editor Inspector**, select **Show Pitches from Scale Assistant**.

RESULT
The note display and the piano keyboard display are changed according to your settings.

EXAMPLE

If you selected **Show Pitches from Scale Assistant** in the **Select Pitch Visibility Options** pop-up menu and the **Scale Assistant** uses a specific scale, but some of the notes in the note display do not match the scale, this is indicated by the color of the note events, and by the exclamation mark on the corresponding keys on the keyboard display.



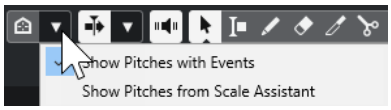
RELATED LINKS

Pitch Visibility Options on page 829
Key Editor Toolbar on page 815
Key Editor Note Display on page 826
Key Editor Piano Keyboard Display on page 827

Pitch Visibility Options

The pitch visibility options allow you to show or hide specific pitches from the **Key Editor** event display and the piano keyboard display. Pitch visibility options are saved with the program. If a setting leads to a situation where no pitches would be shown, all pitches are shown instead.

- To open the pitch visibility options, click **Select Pitch Visibility Options** on the **Key Editor** toolbar.



The following options are available:

Show Pitches with Events

Allows you to show only the pitches for which events are available in the note display.

NOTE

If you edit multiple MIDI parts, the pitches of all note events in the different MIDI parts are taken into account. The visible pitches are updated, based on the MIDI part selection in the **Project** window.

Show Pitches from Scale Assistant

Allows you to show only the pitches matching the musical scale that is selected in the **Scale Assistant** section of the **Key Editor Inspector**.

- **Use Editor Scale**

  Shows only notes that match the editor scale.

NOTE

If the note display contains note events on pitches that do not match the selected scale, the corresponding keys on the keyboard display are shown with an exclamation mark. If you activate the **Scale/Chords** option in the **Event Colors** pop-up menu on the **Key Editor** toolbar, the non-matching note events are displayed in a different color.

- **Use Chord Track**

  Shows only notes that match the chord track. The **Chord Track Mode** that you selected for the **Scale Assistant** determines if the pitches of the scale, the chord, or both are visible.

RELATED LINKS
Event Colors Menu on page 780
Key Editor Piano Keyboard Display on page 827
Key Editor Note Display on page 826
Showing Specific Pitches in the Key Editor on page 828

Pitch Editing with Reduced Pitch Visibility

If you edit pitches and reduce the pitch visibility via one of the **Select Pitch Visibility Options**, there are some general guidelines regarding the behavior of the program that you should keep in mind.

As a general rule, you can only move note events to pitch positions that are visible. This applies to moving note events upwards/downwards with the mouse, to using the corresponding key command, or to using the cursor keys.

Exceptions

To access specific pitch positions that are not displayed, you have the following possibilities:

- To move note events to pitch positions that are not visible, use the **Pitch** value field on the info line.
- To move note events by octaves, select the note event, and press **Shift** - **Up Arrow** to move it up an octave or **Shift** - **Down Arrow** to move it down an octave.
- To move chord notes, open the **Chord Editing** section, and activate an option in the **Inversions** or **Drop Notes** section.

In all these cases, the note display and the piano keyboard display extend to show the new pitches.

RELATED LINKS
Pitch Visibility Options on page 829
Key Editor Note Display on page 826
Key Editor Piano Keyboard Display on page 827

Key Editor Operations

This section describes the principal editing operations within the **Key Editor**.

Matching Note Events to a Musical Scale

You can select a musical scale that is based on all or selected note events in the **Key Editor** and match note events to it.

PROCEDURE

1. Open a MIDI part in the **Key Editor**.
2. Open the **Scale Assistant** section of the **Inspector**, and activate **Use Editor Scale**.
3. Do one of the following:
   - Select some note events in the note display to receive suggestions of musical scales that match those notes.
   - Deselect all note events in the note display to receive suggestions of musical scales that match all notes of the MIDI part.
4. Activate **Show Scale Note Guides**.

   This changes the background of the event display according to the selected scale so that pitches that do not belong to the scale are shown with a darker background.
5. On the **Key Editor** toolbar, set **Event Colors** to **Scale/Chords**.

   This changes the colors of the note events in the event display according to whether or not the pitches match the selected musical scale.

   NOTE

   To view the color scheme of the selected color mode, open the **Event Colors** pop-up menu, and select **Setup**.
6. Open the **Scale Suggestions** pop-up menu, and select one of the options.
7. Optional: On the **Key Editor** toolbar, open the **Select Pitch Visibility Options** pop-up menu , and select **Show Pitches from Scale Assistant**.

   This filters the note display and the piano keyboard display so that they show only the pitches that match the selected musical scale.

RESULT

The coloring of the event display background and the note events serves as a visual guide for editing note pitches.

AFTER COMPLETING THIS TASK

If you need more assistance to match note events to the nearest pitches of the selected musical scale, you can click **Quantize Pitches** to quantize pitches of existing MIDI notes. Activate **Snap Pitch Editing** to snap the note pitches of MIDI notes while editing or **Snap Live Input** to map the note pitches of incoming MIDI.

RELATED LINKS

Using the Chord Track to Match Note Events to a Musical Scale on page 832
Scale Assistant in the Key Editor on page 825
Showing Specific Pitches in the Key Editor on page 828
Snapping MIDI Note Pitches to Musical Scales While Editing on page 834

Mapping Incoming MIDI Note Pitches to Musical Scales on page 833
Quantizing MIDI Note Pitches to Musical Scales on page 833

Using the Chord Track to Match Note Events to a Musical Scale

You can select a musical scale that is defined by chords or scales on the chord track and match note events to it.

PREREQUISITE

You have added a chord track with chord events to your project.

PROCEDURE

1. Open a MIDI part in the **Key Editor**.
2. Open the **Scale Assistant** section of the **Inspector**, and activate **Use Chord Track**.
3. Open the **Chord Track Mode** pop-up menu, and do one of the following:
   - To match note events to the scale events on the chord track, select **Scales**.
   - To match note events to the chord events on the chord track, select **Chords**.
   - To match note events to both scale and chord events on the chord track, select **Chords & Scales**.
4. Activate **Show Scale Note Guides**.

   This changes the background of the event display according to the selected scale, so that pitches that do not belong to the scale are shown with a darker background.
5. On the **Key Editor** toolbar, set **Event Colors** to **Scale/Chords**.

   This changes the colors of the note events in the event display according to whether or not the pitches match the selected musical scale.

   NOTE

   To view the color scheme of the selected color mode, open the **Event Colors** pop-up menu, and select **Setup**.
6. Optional: On the **Key Editor** toolbar, open the **Select Pitch Visibility Options** pop-up menu , and select **Show Pitches from Scale Assistant**.

   This filters the note display and the piano keyboard display so that they show only the pitches that match the selected musical scale.

RESULT

The coloring of the event display background and the note events serves as a visual guide for editing note pitches.

NOTE

As you might have added different scale/chord events at specific time positions, the scale indications in the event display background and on the note events change along the timeline.

AFTER COMPLETING THIS TASK

If you need more assistance with matching note events to the nearest pitches of the selected musical scale, you can click **Quantize Pitches** to quantize pitches of existing MIDI notes, activate **Snap Pitch Editing** to snap the note pitches of MIDI notes while editing or activate **Snap Live Input** to map the note pitches of incoming MIDI.

RELATED LINKS
Event Colors Menu on page 780
Matching Note Events to a Musical Scale on page 831
Scale Assistant in the Key Editor on page 825
Showing Specific Pitches in the Key Editor on page 828
Chord Track on page 922

Quantizing MIDI Note Pitches to Musical Scales

You can quantize MIDI note pitches to the nearest pitch of the selected scale.

PREREQUISITE

In the **Key Editor**, you have selected a scale for your MIDI notes or you have selected a **Chord Track Mode**.

PROCEDURE

1. Open the **Scale Assistant** section of the **Inspector**.
2. Optional: Activate **Show Scale Note Guides**.
3. Do one of the following:
   - In the note event display, select the notes whose pitches you want to quantize.
   - Deselect all notes in the note event display to quantize all note pitches of the MIDI part.
4. Click **Quantize Pitches**.

RESULT

All note pitches that do not match the selected scale are quantized to the nearest pitches in the scale.

RELATED LINKS
Matching Note Events to a Musical Scale on page 831
Using the Chord Track to Match Note Events to a Musical Scale on page 832
Scale Assistant in the Key Editor on page 825
Snapping MIDI Note Pitches to Musical Scales While Editing on page 834
Mapping Incoming MIDI Note Pitches to Musical Scales on page 833
Quantizing MIDI Note Pitches to Musical Scales on page 833

Mapping Incoming MIDI Note Pitches to Musical Scales

When monitoring or recording in the **Key Editor**, you can map the note pitches of incoming MIDI to the nearest pitches of the selected scale.

PREREQUISITE

In the **Key Editor**, you have selected a scale for the MIDI notes or you have selected a **Chord Track Mode**.

PROCEDURE

1. Open the **Scale Assistant** section of the **Inspector**.
2. Activate **Show Scale Note Guides**.
3. On the **Key Editor** toolbar, activate **Record in Editor**.
4. To start playback, click **Start** on the **Transport** panel or in the **Transport Bar**.
5. Activate **Snap Live Input**.

6. Play or record some notes on your MIDI keyboard.

RESULT

The pitches of the played or recorded notes are automatically mapped to the selected scale.

RELATED LINKS

Matching Note Events to a Musical Scale on page 831
Using the Chord Track to Match Note Events to a Musical Scale on page 832
Scale Assistant in the Key Editor on page 825
Using Live Input on page 939

Snapping MIDI Note Pitches to Musical Scales While Editing

You can snap the note pitches of MIDI notes to the nearest pitches of the selected scale while editing in the **Key Editor**.

PREREQUISITE

In the **Key Editor**, you have selected a scale for your MIDI notes or you have selected a **Chord Track Mode**.

PROCEDURE

1. Open the **Scale Assistant** section of the **Inspector**.
2. Activate **Show Scale Note Guides**.
3. Activate **Snap Pitch Editing**.
4. Do one of the following:
   - Insert a note event with the **Draw** tool, the **Object Selection** tool, or with the **Line** tool.
   - Drag a note event upwards or downwards with the mouse.
   - Select a note event, and use the **Up Arrow** / **Down Arrow** keys.

RESULT

The notes snap to pitches of the selected scale. You cannot place notes on pitches outside of the scale. If you select multiple notes and move them to different pitches, all selected notes snap to the pitches of the selected scale.

NOTE

Snap Pitch Editing does not apply when you change pitches by means of the **Pitch** value field on the info line or if you record notes via MIDI input.

RELATED LINKS

Matching Note Events to a Musical Scale on page 831
Using the Chord Track to Match Note Events to a Musical Scale on page 832
Scale Assistant in the Key Editor on page 825
Drawing Note Events with the Draw Tool on page 835
Inserting Note Events with the Object Selection Tool on page 835
Drawing Note Events with the Line Tool on page 836
Moving and Transposing Note Events on page 837
Modifying Note Values while Inserting Notes on page 836

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.

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.

    NOTE

    If **Double-Click Opens Note Expression Editor** is activated on the **Key Editor** toolbar, double-clicking a note event opens the note expression editor instead.

RESULT

The note event is deleted.

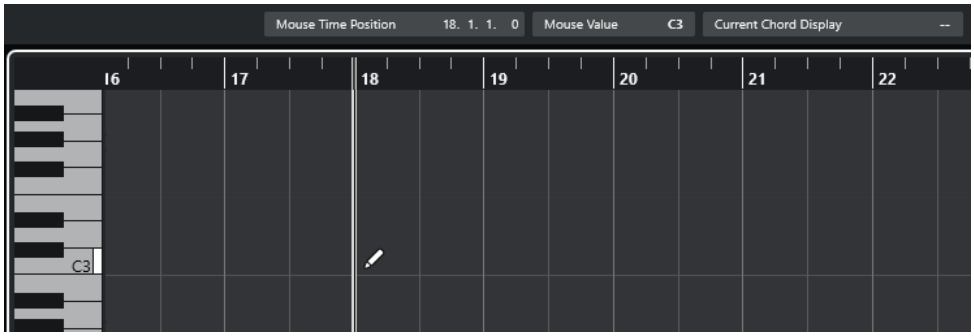
RELATED LINKS

Key Editor Toolbar on page 815
Note Expression Event Editor on page 911

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/Opt**.

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/Opt**, 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 the horizontal direction, press **Ctrl/Cmd** and drag.

  The notes have the same pitch.

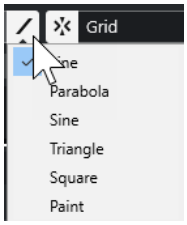
If **Snap** is activated, the note events and the controller events are positioned and sized according to the **Quantize** and **Length Quantize** values.

RELATED LINKS
Line Tool Modes on page 836

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 open the **Line** tool modes, click **Line**.



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, at 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 the notes 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 buttons in the **Nudge** section on the toolbar, select the note events, and click a button.
- To move note events to the project cursor position, select the note events, and select **Edit** > **Move** > **Event Starts 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 controllers selected for these note events move accordingly.
- You can also adjust the position of note events by quantizing.

RELATED LINKS
Transpose Setup Dialog on page 767

Resizing Note Events

Do one of the following:

- To resize the note event, position the **Object Selection** tool at the start or at the end of a note event, and drag the mouse cursor to the left or right.
- To apply time-stretching and note expression data 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 the end positions of the selected notes in steps according to the **Length Quantize** value on the toolbar, use the **Nudge Start Left**, **Nudge Start Right**, **Nudge End Left**, and **Nudge End Right** buttons in the **Nudge** section.
- 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
Value Editing Rules on the Info Line on page 51
Using the Trim Tool on page 838
Resizing Events with the Object Selection Tool - Sizing Applies Time Stretch on page 204

Using the Trim Tool

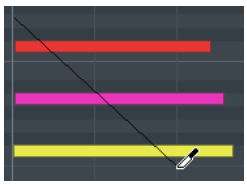
The **Trim** tool allows you to change the length of note events by cutting off the end or the beginning of notes. Using the **Trim** tool means moving the note-on or the note-off event for one or several notes to a position defined with the mouse.

PROCEDURE

1. Select **Trim** on the toolbar.

   The mouse pointer changes to a knife symbol.
2. To edit a single note, click it.

   The range between the mouse pointer and the end of the note is 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 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 are trimmed along this line. Pressing **Ctrl/Cmd** while dragging results in 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 a specific position, select **Split**, and click.

  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 note events of the 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. The properties (velocity, pitch, etc.) of the first note event apply.

Changing the Pitch of Chords

You can use the chord type buttons to change the pitch of chords.

PROCEDURE

1. In the **Key Editor 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, the chord type, and the tensions are indicated in the **Chord Type** field. This also works with arpeggiated notes.
3. In the **Chord Editing** section, activate one of the **3-Note Chords/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

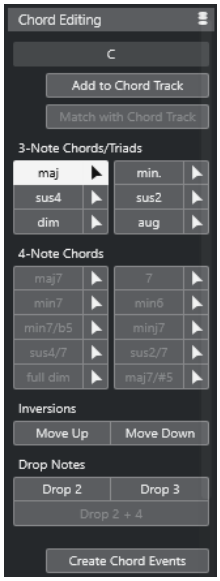
PROCEDURE

1. In the **Key Editor 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 **Key Editor Inspector** allows you to insert and edit chords, and to change voicings.

Chord type of selected notes

Shows the chord type of the selected chords.

Add to Chord Track

Adds the chord, as indicated in the **Chord type of selected notes** 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.

3-Note Chords/Triads

Allows you to insert triads into the note display. You can also click one of the **3-Note Chords/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 Up

Inverts the lowest note of a chord. The corresponding notes are transposed by as many octaves as needed.

Inversions - Move Down

Inverts the highest note of a chord. The corresponding notes are transposed by as many octaves as needed.

Drop Notes - Drop 2

Moves the second highest note of a chord down by one octave.

Drop Notes - Drop 3

Moves the third highest note of a chord down by one octave.

Drop Notes - Drop 2 + 4

Moves the second and fourth highest notes of a chord down by one octave.

Create Chord Events

Performs a chord analysis of the selected notes. If no note is selected, the entire MIDI part is analyzed.

RELATED LINKS

Create Chord Events Dialog on page 943

Inserting Chords

You can use the tools in the **Chord Editing** section of the **Key Editor Inspector** to insert and edit chords.

PROCEDURE

1. In the **Key Editor 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, and 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 the 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 **Key Editor 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 Value** field.
- In the note event, if the zoom factor is high enough.
- At the mouse pointer when dragging a note event.

Editing Note Events via MIDI Input

The **MIDI Input** allows you to insert note events or chords via MIDI. These can be added to already existing note events or they can replace them.

PROCEDURE

1. Right-click the **Key Editor** toolbar, and activate **Step/MIDI Input**.
2. In the **Step/MIDI Input** section, activate **MIDI Input**.
3. Use the controls to the right to determine which properties are included when you insert the note events:
   - To include the pitch when you insert notes, activate **Record Pitch**.
   - To include the note-on velocity/note-off velocity of the played notes, activate **Record NoteOn Velocity**/**Record NoteOff Velocity**.
   - To keep existing notes, activate **Keep Existing Notes**.
4. In the note display, select the note event that you want to edit.
5. Press one or several keys on your MIDI instrument.

RESULT

The selected note assumes the pitch, the note-on velocity and/or the note-off velocity of the played note or chord. The next note in the edited part is automatically selected, to allow for quick editing of a series of notes.

RELATED LINKS

Key Editor Toolbar on page 815
Inserting Note Events via Step Input on page 843

Inserting Note Events via Step Input

Step Input allows you to insert note events or chords one at a time, without worrying about the exact timing. This is useful, for example, when you know the part to record but are not able to play it exactly as you want it.

PROCEDURE

1. Right-click the **Key Editor** toolbar, and activate **Step/MIDI Input**.
2. In the **Step/MIDI Input** section, activate **Step Input**.
3. Open the **Length Quantize** pop-up menu, and select a value to determine the length of the note events or chords that you want to insert.

   NOTE

   If you set the **Length Quantize** value to **Quantize Link**, the note length is determined by the **Quantize** value.

4. Open the **Quantize** pop-up menu, and select a value to determine the step length, that is, the position of the following note events or chords that you want to insert.
5. Set the project cursor to the position where you want the first note event or chord to start.
6. Do one of the following:
   - To insert a note event or a chord, press one or several keys on your MIDI instrument.

     NOTE

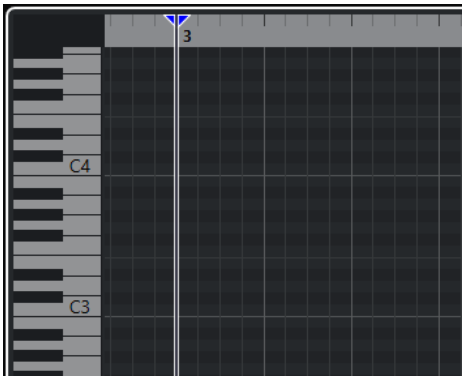
     The length of the inserted note event or chord is determined by the **Length Quantize** value.

   - To lengthen/shorten the note event or chord while inserting it, press one or several keys on your MIDI instrument, and press **Right Arrow** / **Left Arrow** while you hold the keys.

     NOTE

     The initial length of the inserted note event or chord is determined by the **Length Quantize** value. However, the lengthening/shortening factor is determined by the **Quantize** value.

   The step input cursor is displayed with blue a handle in the ruler, and a vertical line in the note display.



   The note event or chord is inserted and the step input cursor automatically jumps to the next position on the timeline that is determined by the **Quantize** value.

NOTE

You can move the step input cursor manually by clicking in the note display, or by pressing **Right Arrow** / **Left Arrow**.

7. Optional: To insert a rest, press the **Right Arrow** key. This advances the step input cursor by one step.
8. Repeat the steps above to insert further note events or chords.
9. When you are done, click **Step Input** again to deactivate step input.

RELATED LINKS
Key Editor Toolbar on page 815
Editing Note Events via MIDI Input on page 842

Score Editor

The basic **Score Editor** shows MIDI notes as a musical score. This offers basic score editing and printing options.

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.

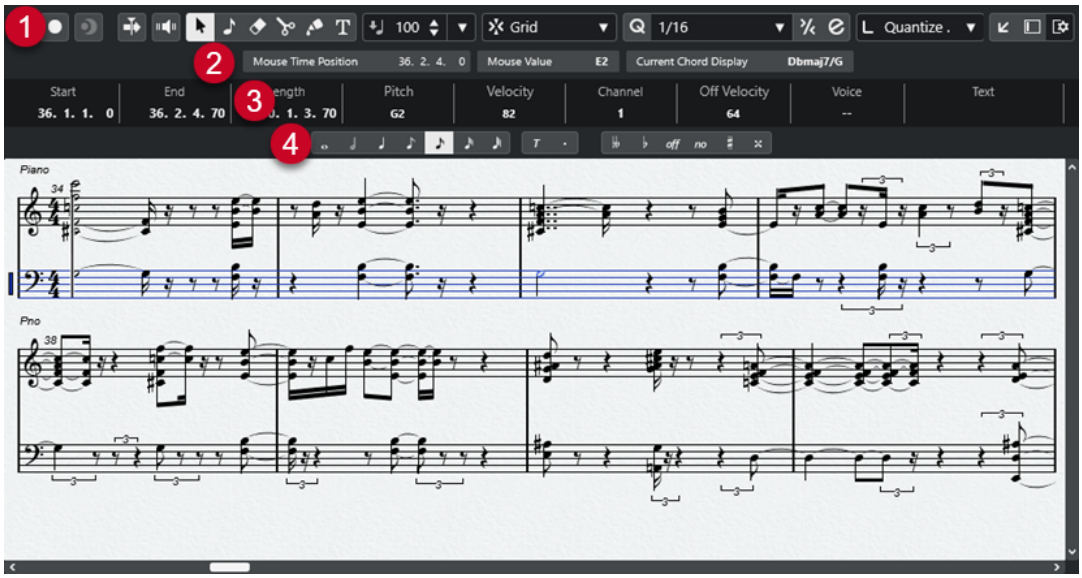
To open a MIDI part in the **Score Editor**, do one of the following:

- 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 changes to specify if you want editors to open in a separate window or in the lower zone of the **Project** window.

The **Score Editor** window:



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 value, 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 barlines 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.

Score Editor 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.

Edit Solo

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 with **MIDI Record Mode** set to **Merge** or **Replace**.

Retrospective Record

Insert MIDI Retrospective Recording in Editor

Allows you to recover MIDI notes that you played in stop mode or during playback.

Left Divider

Left Divider

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

Auto-Scroll

Auto-Scroll

Keeps the project cursor visible during playback.

Acoustic Feedback

Acoustic Feedback

Automatically plays back events when you move or transpose them, or when you create them by drawing.

Tool Buttons

Object Selection

Selects events and parts.

Insert Note

Inserts notes.

Erase

Deletes events.

Split

Splits events.

Glue

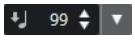
Glues together events of the same pitch.

Insert Text

Inserts text.

Insert Velocity

Note 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

Apply Quantize

Applies the quantize settings.

Quantize Presets

Allows you to select a quantize or a groove preset.

Soft Quantize On/Off

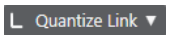
Activates/Deactivates soft quantize.

Open Quantize Panel

Opens the **Quantize Panel**.

Length Quantize

Length Quantize



Allows you to set a value for quantizing event lengths.

Step/MIDI Input

Computer Keyboard Input

Activates/Deactivates computer keyboard input.

Step Input

Activates/Deactivates MIDI step input.

MIDI Input

Activates/Deactivates MIDI input and note expression MIDI step input.

Move Insert Mode

Moves all note events to the right of the step input cursor 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 **Editor** tab in the lower zone. It opens the editor in a separate window.

Open in Lower Zone

This button is available in the editor window. It opens the **Editor** tab in the lower zone of the **Project** window.

Show/Hide Left Zone

Shows/Hides the left zone.

Set up Window Layout

Allows you to set up the window layout.

Score Editor Status Line

The **Score Editor** 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 **Editor** tab in the lower zone of the **Project** window 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 Value

Displays the exact pitch of the mouse pointer position in the event display. 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.

Score Editor Info Line

The **Score Editor** 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**.

The on/off status of the info line in the **Score Editor** window and in the **Editor** tab in the lower zone of the **Project** window are independent of each other.

RELATED LINKS
Changing the Ruler Display Format on page 779

Score Editor Extended Toolbar

The extended toolbar contains note value buttons and enharmonic shift buttons.

- To show the extended toolbar, click **Set up Window Layout** on the toolbar, and activate **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 info line.

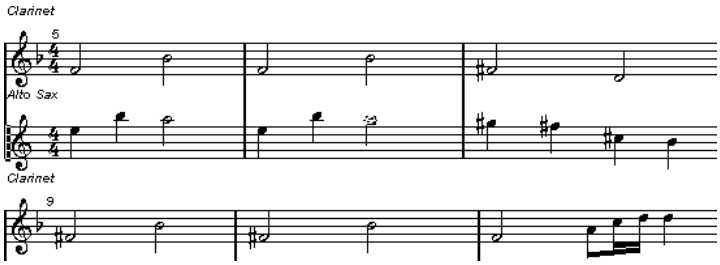
To resize all selected notes to the same note value, press **Ctrl/Cmd** and click one of the note value buttons.

Enharmonic Shift

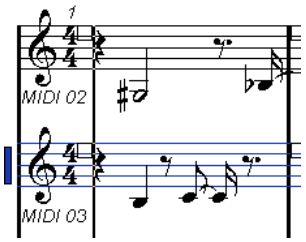
Allows you to manually select whether a note is displayed with flat or sharp accidentals. The **Off** button resets the notes to original display. The other options are **double flats**, **flats**, **No** (no accidentals shown, regardless of pitch), **sharps**, and **double sharps**.

RELATED LINKS
Enharmonic Shift on page 855

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 barlines.
- 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 barline.

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

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

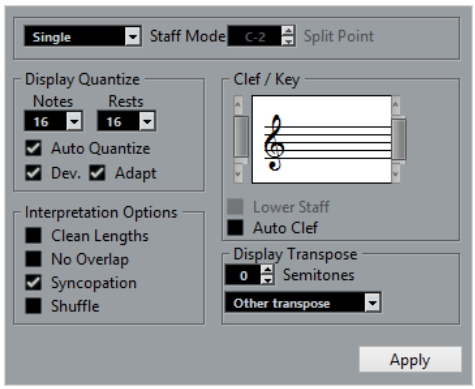
This dialog allows you to change how Cubase displays the music.

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, do one of the following:

- Select a staff and select **MIDI** > **Scores** > **Staff Settings**.
- Double-click in the area to the left of the staff.



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.

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/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

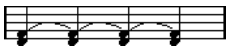
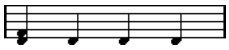
In this section, you can make additional settings on how the score is displayed.

Clean Lengths

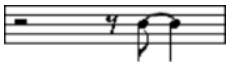
If this option is activated, notes that are considered to be chords are shown with identical lengths. Longer notes are displayed shorter than they are. Notes with very short overlaps are also cut off. This is similar to the **No Overlap** option, but with a more subtle effect.

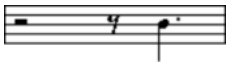
No Overlap

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:



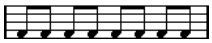
Shuffle

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.

PREREQUISITE

You have set the note value (length) and spacing.

PROCEDURE

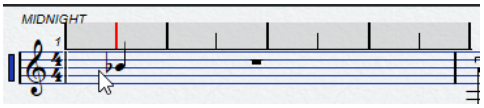
1. Set the note value in one of the following ways:
   - Click the note symbols on the extended toolbar.
   - Select an option from the **Length Quantize** pop-up menu on the toolbar.
2. Select the **Insert Note** tool.

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 **Mouse Value** display on the status line shows the pitch at the pointer position. The position is displayed on the **Mouse Time Position** display on the status line.
5. Click in the staff.

   When you click and hold down the mouse button, the bars and beats positions are shown. This allows you to find the correct position.



NOTE

The position snaps to the grid that is defined by the quantize value.

RESULT

The note appears in the score. The notes get the insert velocity value that is set in the **Note 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, if you entered a 1/32 note that is displayed as a 1/16 note.

RELATED LINKS

Setting Velocity Values on page 787
Display Quantize on page 851

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 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/Opt** 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 850
Editing Note Events on the Info Line on page 786

Splitting and Gluing Note Events

- To split 2 notes that are strung together by a tie, click on the tied note head with the **Split** tool.
- The note is split 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
Score Editor Extended Toolbar on page 849

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**, and **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/Opt** 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.

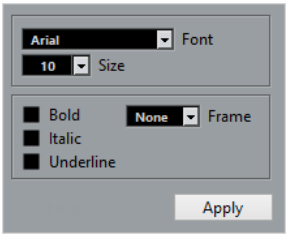
PROCEDURE

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 changes.
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 changes.
6. Click **Print**.

Drum Editor

You can use the **Drum Editor** 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 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 to it 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 to **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. Specify if you want the **Drum Editor** to open in a separate window or in the lower zone of the **Project** window.

The **Drum Editor** window:

The **Drum Editor** is divided into several sections:

1 Toolbar

Contains tools and settings.

2 Status line

Informs you about the mouse time position and the mouse value.

3 Info line

Displays information about the selected event.

4 Left Zone (**Drum Editor Inspector**)

Contains tools and functions for working with MIDI data.

5 Drum sound list

Lists all drum sounds.

6 Ruler

Displays the timeline.

7 **Note display**

Contains a grid in which notes are displayed.

8 **Drum map**

Allows you to select the drum map for the edited track or a list of drum sound names.

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.

RELATED LINKS
Drum Editor Toolbar on page 859
Drum Editor Status Line on page 866
Drum Editor Info Line on page 867
Drum Editor Inspector on page 868
Drum Editor Note Display on page 869
Controller Display on page 789

Drum Editor 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.

Solo/Feedback

Solo Editor

Solos the editor during playback if the editor has the focus.

Solo Instrument (Requires Drum Map)

Solos the instrument during playback.

NOTE

This only works if there is a drum map assigned.

Record in Editor

Enables the recording of MIDI data in the editor if the editor has the focus.

NOTE

This only works with **MIDI Record Mode** set to **Merge** or **Replace**.

Retrospective Record

Insert MIDI Retrospective Recording in Editor

Allows you to recover MIDI notes that you played in stop mode or 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.

Pitch Visibility

Pitch Visibility On/Off

Activates the selected pitch visibility option.

Select Pitch Visibility Options

Deactivate this to show all drum sounds in the note display. Activate this to reduce the drum sounds in the note display according to the selected pitch visibility option.

- **Show Drum Sounds with Events** shows only the drum sounds for which events are available in the note display.
- **Show Drum Sounds in Use by Instruments** shows the drum sounds for which a pad, etc. is in use. This option is only available in case the instrument can provide this information.
- **Reverse Drum Sound List** reverses the order of the sounds displayed in the drum sound list.

Auto-Scroll

Link Project and Lower Zone Editor Cursors

Links timelines, cursors, and zoom factors of the **Editor** tab in the lower zone 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.

Select Auto-Scroll Settings

Allows you to activate **Page Scroll** or **Stationary Cursor** and to activate **Suspend Auto-Scroll When Editing**.

Acoustic Feedback

Acoustic Feedback

Automatically plays back events when you move or transpose them, or when you create them by drawing.

Tool Buttons

Object Selection

Selects events and parts.

Range Selection

Selects ranges.

Drumstick

Draws drum events.

Erase

Deletes events.

Mute

Mutes events.

Zoom

Zooms in. Hold **Alt/Opt**, and click to zoom out.

Line

Creates a series of continuous events.

Auto Select Controllers

Auto Select Controllers

Automatically selects controller data of the selected MIDI notes.

Independent Track Loop

Independent Track Loop

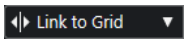
Activates/Deactivates the independent track loop.

NOTE

If you activate **Independent Track Loop**, the **Link Project and Lower Zone Editor Cursors** function is automatically deactivated in the **Editor** tab in the lower zone.

Nudge

Nudge Settings



Allow you to set up a snap grid for the nudge commands.

- By default, the snap grid for nudge operations is set to **Link to Grid**, and the step width corresponds to the snap grid.
- If you activate **Link to Primary Time Format**, the snap grid for nudge operations follows the primary time format, and you can set up the step width in the **Nudge Settings** pop-up menu.
- If you deactivate **Link to Grid** and **Link to Primary Time Format**, you can set up an independent snap grid for nudge operations. In this case, you can select a time format and a value from the **Nudge Settings** pop-up menu.

NOTE

To display the nudge buttons, click the points to the right of the **Nudge Settings**.

Nudge Start Left

Increases the length of the selected event by moving its start to the left.

Nudge 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.

Nudge End Left

Decreases the length of the selected event by moving its end to the left.

Nudge 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

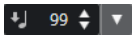
Transposes the selected event up by an octave.

Move Down More

Transposes the selected event down by an octave.

Insert Velocity

Note 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.

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 to the end of other events.
- **Shuffle** changes the order of events, if you drag one event to the left or to the right of other events.
- **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 to the 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 to the end of other events, or to the cursor position.

Grid Type

Allows you to select one of the following grid types:

- **Use Quantize** activates a grid where events snap to the value that is selected in the **Quantize Presets** pop-up menu.
- **Adapt to Zoom** activates a grid where events snap to the zoom level.
- **Use Snap from Drum Map** activates a grid where events snap to the **Snap** value that is selected in the drum map.

Quantize

Apply Quantize

Applies the quantize settings.

Quantize Presets

Allows you to select a quantize or a groove preset.

Soft Quantize On/Off

Activates/Deactivates soft quantize.

Open Quantize Panel

Opens the **Quantize Panel**.

Multiple Part Controls

Show Part Borders

Shows/Hides part borders for the active MIDI part within the left and right locators.

Part Editing Mode

Sets the editing mode for parts.

- **All Parts** allows you to select and edit all events of all visible parts.
- **Active Part** restricts selecting and editing to events of the active part.

Part Editing Mode

Sets the editing mode for parts.

- **All Parts** allows you to select and edit all events of all visible parts.
- **Active Part** restricts selecting and editing to events of the active part.

Activate Part for Editing

Lists all parts that were selected when you opened the editor and allows you to activate a part.

Event Colors

Event Colors

Allows you to select event colors.

Step/MIDI Input

Step Input

Activates/Deactivates step input.

MIDI Step Input/Note Expression MIDI Input

Activates/Deactivates MIDI step input and note expression MIDI input.

Move Insert Mode

Moves all note events to the right of the step input cursor 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.

Keep Existing Notes

Keeps existing notes when you insert notes.

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 **Editor** tab in the lower zone. It opens the editor in a separate window.

Open in Lower Zone

This button is available in the editor window. It opens the **Editor** tab in the lower zone of the **Project** window.

Show/Hide Left Zone

Shows/Hides the left zone.

Show/Hide Controller Lanes

Shows/Hides the controller lanes.

Set up Window Layout

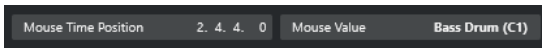
Allows you to set up the window layout.

RELATED LINKS
Zooming in MIDI Editors on page 780
Part Editing Mode Pane on page 788

Drum Editor Status Line

The **Drum Editor** status line is displayed below the toolbar. It displays important mouse information.

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



The on/off status of the status line in the **Drum Editor** window and in the **Editor** tab in the lower zone of the **Project** window 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 Value

Displays the exact pitch of the mouse pointer position in the event display. This facilitates finding the right pitch when entering or transposing notes.

If you move the mouse in the controller display, the controller event value at the mouse cursor position is displayed.

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 is displayed.

RELATED LINKS
Drum Editor Toolbar on page 859

Drum Editor Info Line

The **Drum Editor** info line displays values and properties of the selected events. If several notes are selected, the values for the first note are displayed in color.

Info Line for Selected Drum Note Events

- To show the info line for drum note events, select the events with the **Object Selection** tool, click **Set up Window Layout** on the toolbar, and activate **Info Line**.
- NOTE

  If several notes are selected, the values for the first note are displayed in color.

The values for **Start**, **End**, and **Length** are displayed in the selected ruler display format.

The values for **Velocity** and **Off Velocity** can be displayed in high resolution. In the **Preferences** dialog (**Editing—MIDI** page), set up the **High Resolution Display Range** and the **High Resolution Decimal Places**.

NOTE

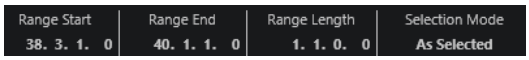
The on/off status of the info line in the **Drum Editor** window and in the **Editor** tab in the lower zone of the **Project** window are independent of each other.

Info Line for Selected Ranges

- To show the info line for a selected range, select a range with the **Range Selection** tool, click **Set up Window Layout** on the toolbar, and activate **Info Line**.

NOTE

The on/off status of the info line in the **Drum Editor** window and in the **Editor** tab in the lower zone of the **Project** window are independent of each other.



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

NOTE

- The on/off status of the info line in the **Drum Editor** window and in the **Editor** tab in the lower zone of the **Project** window are independent of each other.
- If several events are selected, the values for the first event are displayed in color.

The values for **Start**, **End**, and **Length** are displayed in the selected ruler display format.

The values for **Velocity** and **Off Velocity** can be displayed in high resolution. In the **Preferences** dialog (**Editing—MIDI** page), set up the **High Resolution Display Range** and the **High Resolution Decimal Count**.

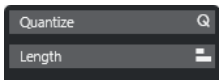
RELATED LINKS
Editing Note Events on the Info Line on page 786

Transpose and Velocity on the Info Line on page 757
Editing - MIDI on page 1131

Drum Editor Inspector

The **Drum Editor Inspector** is located to the left of the note display. It contains tools and functions for working with MIDI data.

- To show/hide **Inspector** sections, right-click the toolbar, and activate/deactivate the corresponding options.



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 to change all events of the active part with no events 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 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 exactly reaches the next note. 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 the slider to extend a note up to the next selected note, activate **Extend to Next Selected**.

  This is identical with activating the **Legato Mode: Between Selected Notes Only** option in the **Preferences** dialog.

NOTE

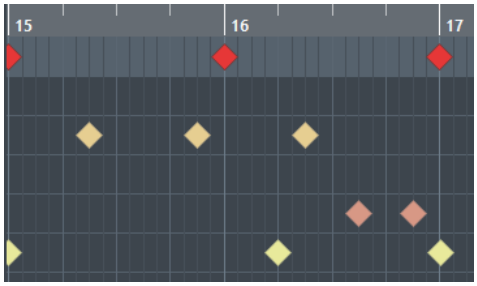
If you open the **Drum Editor** in the lower zone, these sections are shown in the **Editor Inspector** in the left zone.

RELATED LINKS

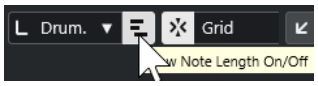
Note Expression Inspector Section on page 903
Quantize Panel on page 299
Opening the Editor Inspector on page 56

Drum Editor 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, indicating 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 position of the note in time.

RELATED LINKS
Drum Editor Toolbar on page 859

Drum Sound List

The drum sound list lists all drum sounds by name and allows you to adjust and manipulate the drum sound setup in various ways.

Pitch	Instrument	Snap	Mute	I-Note	O-Not	Channel	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

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.

Snap

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.

Channel

The MIDI channel on which the drum sound is played back.

Output

The MIDI output on which the drum sound is played back.

RELATED LINKS
Muting Notes and Drum Sounds on page 873
Drum Maps on page 874

Select Pitch Visibility Options Menu

The **Select Pitch Visibility Options** pop-up menu on the drum editor toolbar allows you to determine which drum sounds are shown in the drum sound list.

- Activate **Pitch Visibility On/Off**, and click **Select Pitch Visibility Options** on the toolbar.

  NOTE

  If **Pitch Visibility On/Off** is deactivated, all drum sounds of the selected drum map are displayed, and you can manually edit the order of the drum sound list.

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 used by the instrument. This option is only available in case 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

The pop-up menus below the drum sound list allow you to choose a drum map for the edited track or to select items or a list of drum sound names.

RELATED LINKS
Drum Maps on page 874

Drum Editor Operations

This section describes the general editing operations within the **Drum Editor**.

Inserting Drum Note Events

You can insert note events with the **Object Selection** tool or with 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 assumes the length of the **Snap** value, as set for the sound in the drum sound list. You have activated **Snap**.

NOTE

If you want to snap positions according to the **Quantize Presets** setting on the toolbar, activate **Use 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/Opt**.

RESULT

A note event is inserted.

Inserting Multiple Drum Note Events

You can insert multiple note events of the same pitch with the **Object Selection** tool or with 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 assumes the length of the **Snap** value, as set for the sound in the drum sound list. You have activated **Snap**.

NOTE

To snap positions according to the **Quantize Presets** setting on the toolbar, activate **Use 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

Drum Editor Toolbar on page 859

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/Opt**, 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, either 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 to 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 Drum 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 Drum Note Events

You can delete multiple note events of the same pitch, either with the **Object Selection** tool or with the **Drumstick** tool.

PREREQUISITE

To delete multiple note events with the **Object Selection** tool, **Snap** must be activated.

PROCEDURE

- Do one of the following:
  - 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, click the first event you want to delete, and drag to the right.

RESULT

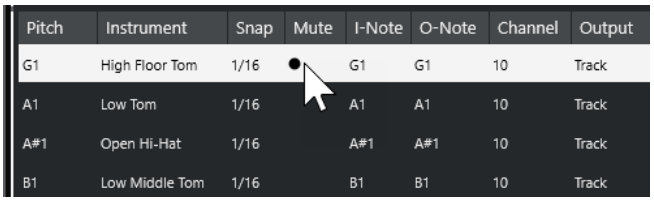
The note events are deleted.

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	Snap	Mute	I-Note	O-Note	Channel	Output
G1	High Floor Tom	1/16	●	G1	G1	10	Track
A1	Low Tom	1/16		A1	A1	10	Track
A#1	Open Hi-Hat	1/16		A#1	A#1	10	Track
B1	Low Middle Tom	1/16		B1	B1	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 877

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 one a snare, and so on.

Different MIDI instruments often use different key assignments. This can be troublesome if you have created a drum pattern using one MIDI device and then want to transfer it to another one. 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 aspects of MIDI drum kits, such as using drum sounds from different instruments with 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 with a drum map assigned to it, the MIDI notes are filtered through the drum map before they are sent to the MIDI instrument. The map determines the MIDI note number sent out for each drum sound and the sound played on the receiving MIDI device.

To try your drum pattern on another instrument, switch to the corresponding drum map, and your snare drum sound remains a snare drum sound.

To include the same drum maps in your projects, 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 99

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 from the **MIDI** menu.

The list on the left shows the loaded drum maps. The sounds and the 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**.

New Map

Adds a new drum map to the project. The drum sounds are named “Sound 1”, “Sound 2”, etc. 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.

Save

Allows you to save the drum map that is selected in the list on disk. Drum map files have the extension `.drm`.

Load

Allows you to load drum maps into your project.

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

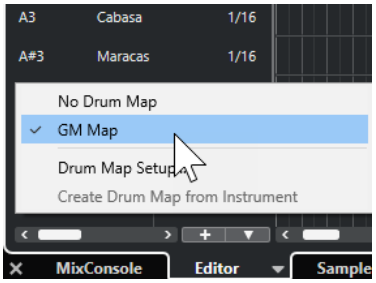
If you audition a sound in the **Drum Map Setup** dialog, and the sound is set to MIDI output **Default**, the output that is selected on the **Output** pop-up menu in the lower left corner is used. When auditioning a default output sound in the **Drum Editor**, the MIDI output selected for the track is used.

RELATED LINKS
Drum Map Settings on page 875
Channel and Output Settings on page 876

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, aside from the pitch, 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 869
Drum Map Setup Dialog on page 874

Importing Drum Maps from Virtual Instruments

You can import your drum map settings to an instrument track that is routed to Groove Agent SE.

PREREQUISITE

To import your drum map settings to an instrument track, the track has to be routed to Groove Agent SE or to 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 **Routing** section.
3. In 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 the channel selected in the **Inspector**.
4. Open the **Drum Maps** pop-up menu again, and select **Drum Map Setup**.
5. From 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 are prioritized, 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 **Drum Maps** pop-up menu in the **Routing** section of the **Inspector** or the **Map** pop-up menu in the **Drum Editor**, and select a drum map.
- To deactivate the drum map functionality in the **Drum Editor**, open the **Drum Maps** pop-up menu in the **Routing** section of the **Inspector** or the **Map** pop-up menu 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 via a name list.

NOTE

Initially, the **Drum Maps** pop-up menu only contains **GM Map**.

I-Notes, O-Notes, and Pitches

Going through the following theory helps you make the most 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	Snap	Mute	I-Note	O-Note	Channel	Output
C1	Bass Drum	1/16		A1	B0	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

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 identifies it as the I-note of the bass drum sound.

This is where the first transformation happens: the note assumes 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 close to each other on the keyboard so that they can easily be played together, move sounds so that the most important sounds can be played from a short keyboard, or play a sound from a black key instead of a white one. 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 real time (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 with the bass drum sound on the C2 key, you set the O-note for the bass drum sound to C2. When you switch to another instrument (with the bass drum on C1), you want the bass drum O-note set to C1. Once you have set up drum maps for all of your MIDI instruments, you can select a different 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 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 is a typical use case to export your MIDI recording as a standard MIDI file. If you first perform an O-note conversion, make sure that your drum tracks play back as intended when they are exported.

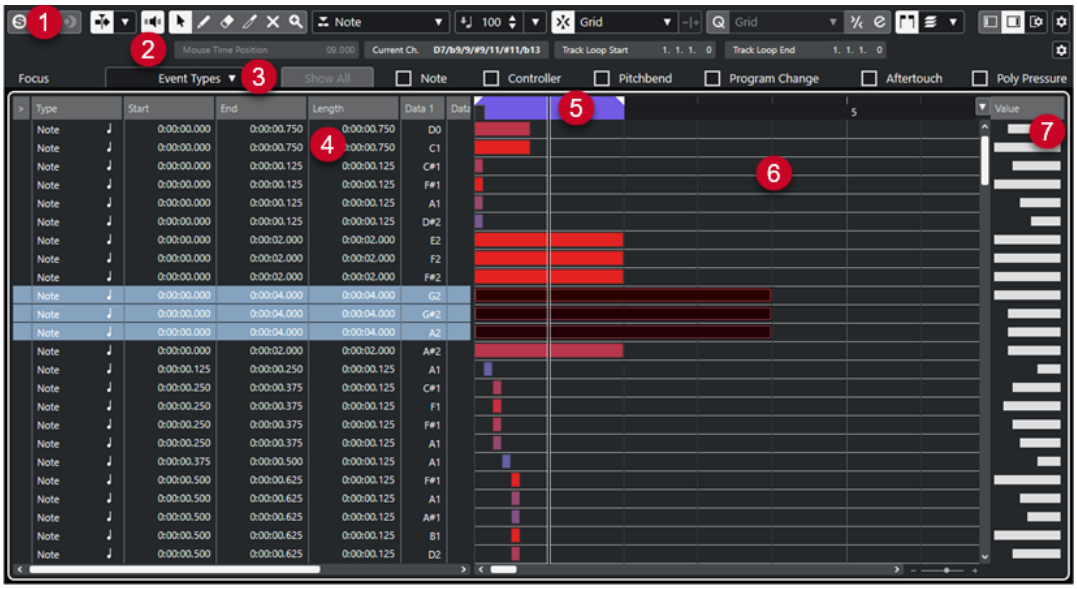
- To perform an O-note conversion, select **MIDI** > **O-Note Conversion**.

RELATED LINKS
Exporting MIDI Tracks as Standard MIDI Files on page 158

List Editor

The **List Editor** displays all events in the selected MIDI parts as a list, allowing you to view and edit their properties numerically. It also enables 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 Filters bar
4 Event list
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.

RELATED LINKS
List Editor Toolbar on page 879
List Editor Status Line on page 884
List Editor Filters Bar on page 885
List Editor Event List on page 885
List Editor Event Display on page 886
List Editor Value Display on page 887

List Editor 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.

Default Items

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 with **MIDI Record Mode** set to **Merge** or **Replace**.

Retrospective Record

Insert MIDI Retrospective Recording in Editor

Allows you to recover MIDI notes that you played in stop mode or during playback.

Auto-Scroll

Auto-Scroll

Keeps the project cursor visible during playback.

Select Auto-Scroll Settings

Allows you to activate **Page Scroll** or **Stationary Cursor** and to activate **Suspend Auto-Scroll When Editing**.

Acoustic Feedback

Acoustic Feedback

Automatically plays back events when you move or transpose them, or when you create them by drawing.

Tool Buttons

Object Selection

Selects events and parts.

Draw

Draws events.

Erase

Deletes events.

Trim

Trims events.

Mute

Mutes events.

Zoom

Zooms in. Hold **Alt/Opt**, and click to zoom out.

Independent Track Loop

Independent Track Loop

Activates/Deactivates the independent track loop.

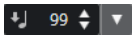
Insert Type

Insert Event Type

Allows you to determine an event type for newly created events.

Insert Velocity

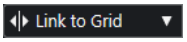
Note Insert Velocity



Allows you to specify a velocity value for new notes.

Nudge

Nudge Settings



Allow you to set up a snap grid for the nudge commands.

- By default, the snap grid for nudge operations is set to **Link to Grid**, and the step width corresponds to the snap grid.
- If you activate **Link to Primary Time Format**, the snap grid for nudge operations follows the primary time format, and you can set up the step width in the **Nudge Settings** pop-up menu.
- If you deactivate **Link to Grid** and **Link to Primary Time Format**, you can set up an independent snap grid for nudge operations. In this case, you can select a time format and a value from the **Nudge Settings** pop-up menu.

NOTE

To display the nudge buttons, click the points to the right of the **Nudge Settings**.

Nudge Start Left

Increases the length of the selected event by moving its start to the left.

Nudge 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.

Nudge End Left

Decreases the length of the selected event by moving its end to the left.

Nudge 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 to the end of other events.
- **Shuffle** changes the order of events, if you drag one event to the left or to the right of other events.
- **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 to the 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 to the end of other events, or to the cursor position.

Quantize

Apply Quantize

Applies the quantize settings.

Quantize Presets

Allows you to select a quantize or a groove preset.

Soft Quantize On/Off

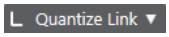
Activates/Deactivates soft quantize.

Open Quantize Panel

Opens the **Quantize Panel**.

Length Quantize

Length Quantize



Allows you to set a value for quantizing event lengths.

Multiple Part Controls

Show Part Borders

Shows/Hides part borders for the active MIDI part within the left and right locators.

Part Editing Mode

Sets the editing mode for parts.

- **All Parts** allows you to select and edit all events of all visible parts.
- **Active Part** restricts selecting and editing to events of the active part.

Part Editing Mode

Sets the editing mode for parts.

- **All Parts** allows you to select and edit all events of all visible parts.
- **Active Part** restricts selecting and editing to events of the active part.

Activate Part for Editing

Lists all parts that were selected when you opened the editor and allows you to activate a part.

Step/MIDI Input

Step Input

Activates/Deactivates step input.

MIDI Step Input/Note Expression MIDI Input

Activates/Deactivates MIDI step input and note expression MIDI input.

Move Insert Mode

Moves all note events to the right of the step input cursor 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

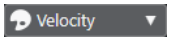
Includes the NoteOff velocity when you insert notes.

Keep Existing Notes

Keeps existing notes 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 Left Zone

Shows/Hides the left zone.

Show/Hide Value Display

Shows/Hides the value display in the right zone.

Set up Window Layout

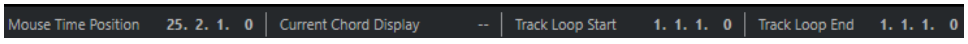
Allows you to set up the window layout.

RELATED LINKS
Part Editing Mode Pane on page 788

List Editor Status Line

The **List Editor** status line is displayed below the toolbar. It displays important information about the mouse position.

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



The on/off status of the status line in the **List Editor** window and in the **Editor** tab in the lower zone of the **Project** window 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 allows you to 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 is displayed.

RELATED LINKS
Drum Editor Toolbar on page 859

List Editor Filters Bar

The **List Editor** filters bar allows you to hide events from view, based on their type and other properties.

- To show the filters bar, click **Set up Window Layout** on the toolbar, and activate **Filters**.

Focus Menu

The **Focus** menu allows you to set up filters.

No Focus

No filter is applied.

Event Types

Only events of the selected type are shown. This is the same as activating the event type options.

Event Types and Subtype

Only events of the selected type and with the selected **Subtype** value are shown. For example, if a note event is selected, only notes with the same pitch are displayed. 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.

Event Type Options

The event type options allow you to hide specific event types from view.

RELATED LINKS
Filtering the Event List on page 888

List Editor 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.

Subtype

Subtype 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 **Subtype** value for notes is displayed as a note number in the format that was selected in the **Preferences** dialog.

Main Value

Main Value of the event. The content of this depends on the event type. For notes, this is the note-on velocity value, for example.

Secondary Value

The **Secondary Value** of the event. This value is only used for note events, where it corresponds to 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.

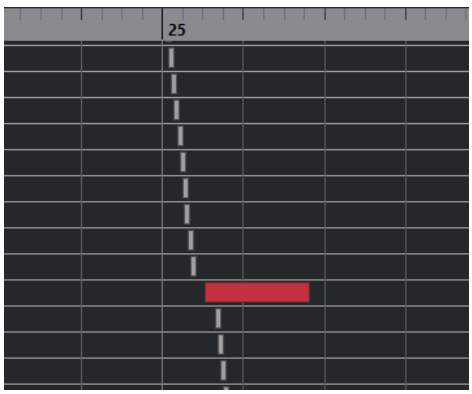
Attributes

Use this for **Text**, **Lyrics**, **SMF Event**, or **SysEx** that require a text entry or a hexadecimal entry.

List Editor Event Display

The **Event Display** displays events graphically.

- The event display is always shown.



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 and drag events to another position.

List Editor 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 the value display, click **Set up Window Layout** on the toolbar, and activate **Value Display**.

The value that is displayed for an event depends on the event type. The following table shows what is displayed and edited:

Event type	Subtype	Main Value	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 **Secondary Value** column, which is used for note-off velocity.

NOTE

For SMF and text events, no values are displayed.

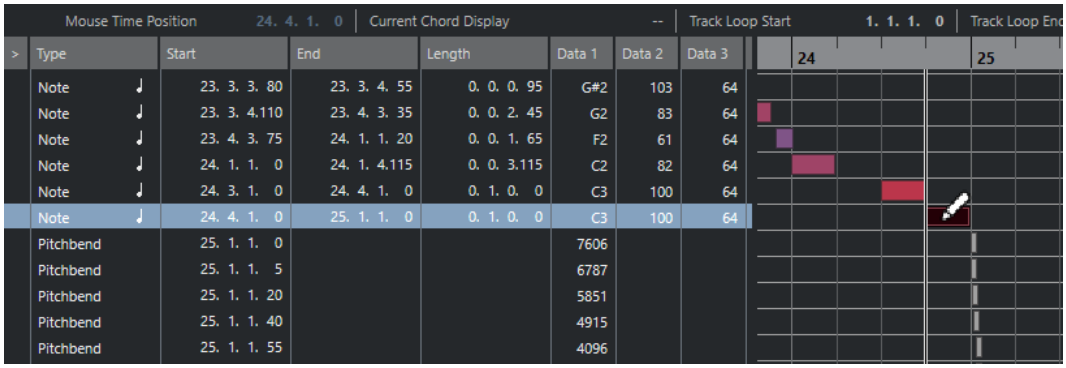
List Editor Operations

This section describes the principal editing operations within the **List Editor**.

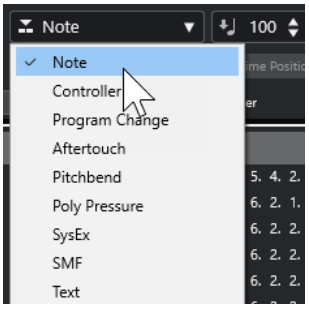
Drawing Events

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.



- 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 is set to the length specified in the **Length Quantize** pop-up menu. Notes assume the insert velocity value set in the **Note 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 **Focus** 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 but 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 all selected events to the same value, press **Ctrl/Cmd**, and edit the value for one event.
- For SysEx (System Exclusive) 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, as other events may begin earlier than the edited event.

RELATED LINKS
SysEx Messages on page 890

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/Opt**, 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 via 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
Event Colors Menu on page 780

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 759

Bulk Dumps

In any programmable device, the computer memory stores the settings as digits. If you change these numbers, you change the settings. Normally, MIDI devices allow you to dump (transmit) all or some settings in the memory of the device 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 dumping a few or all of its settings via MIDI by activating a function on the front panel, this dump is likely to 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 this case, use the **MIDI SysEx Editor** to insert the specific Dump Request message (refer to the documentation included with the instrument) 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. In the **Preferences** dialog, select **MIDI** > **MIDI Filter**.
2. In the **Record** section, deactivate the **SysEx** checkbox to make sure that the recording of SysEx data is not filtered.

   As a result, SysEx messages are recorded but not echoed back to the instrument. This can lead to unpredictable results.
3. Activate recording on a MIDI track, and initiate the dump from the front panel of the instrument.
4. When you have finished recording, select the new part, and select **MIDI** > **List Editor**.

   This allows you to verify 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 SysEx (System Exclusive) data to the device. For information such as MIDI channels to be used, refer to the documentation included with the MIDI device.

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.

Recording and Transmitting Bulk Dumps

- Do not transmit more data than you need. If all you want is a single program, do not send everything. Otherwise, it could get too difficult to find the recognized program. Usually, you can specify exactly which data 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, for example, a single sound, you can put the dump in the middle of the project to quickly re-program a device. You can achieve the same effect by using Program Change. This is preferable, as 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 SysEx dumps, you can put these on a special muted track. To make use of these parts, drag them to an empty unmuted track and play them 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 refuse to load the dump at a later point in time.

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 made on the front panel as SysEx messages. These can be recorded in Cubase and thus incorporated into a regular MIDI recording.

For example, 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. In the **Preferences** dialog, select **MIDI** > **MIDI Filter**, and make sure that **SysEx** is deactivated in the **Record** section.
2. Make sure that the instrument is set to transmit changes of front panel controls as SysEx messages.
3. Record.

AFTER COMPLETING THIS TASK

In the **List Editor**, check if the events were recorded properly.

MIDI SysEx Editor

- To open the **MIDI SysEx Editor** for a SysEx event, click in the **Attributes** column for the event in the **List Editor**.

In the **MIDI SysEx Editor**, the bytes are displayed as follows:

Address

Shows the location of the value in the message.

0-7

Shows the entire message in hexadecimal format.

SysEx messages always begin with F0 and end with F7, with 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. You can edit all values except for the first (F0) and the last ones (F7).

ASCII

Shows the selected value in ASCII format.

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 entire 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 is loaded.

- To import SysEx data, open the **MIDI SysEx Editor** and click **Import**.

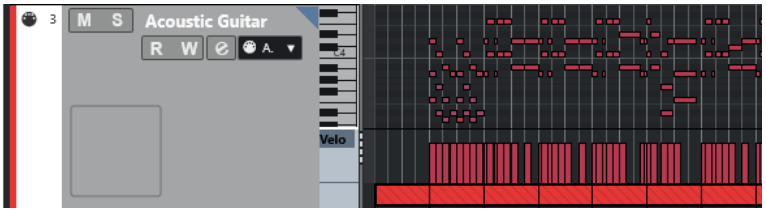
- To export SysEx data, open the **MIDI SysEx Editor** and click **Export**.

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 in the **Project** window, for quick and efficient editing in context with other tracks.

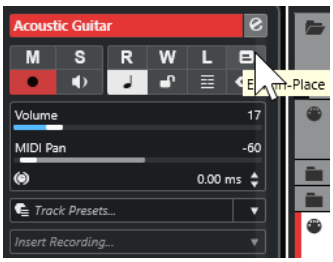


The **In-Place Editor** expands the MIDI track to show a miniature **Key Editor**. When you select a MIDI note, the **Project** window info line shows the same information about the note as the info line in the **Key Editor**. You can perform the same editing as in the **Key Editor**.

RELATED LINKS
Editing Note Events on the Info Line on page 786

Opening the In-Place Editor

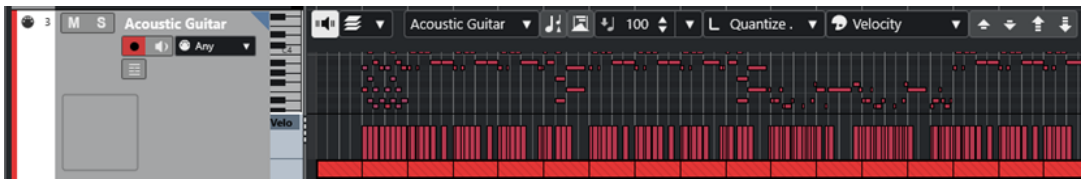
- To open the **In-Place Editor** for the selected tracks, select **MIDI** > **Open In-Place Editor**.
- To open the **In-Place Editor** for a single MIDI track, click **Edit In-Place** in the **Inspector**.



In-Place Editor 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

Part Editing Mode

Sets the editing mode for parts.

- **All Parts** allows you to select and edit all events of all visible parts.
- **Active Part** restricts selecting and editing to events of the active part.

Activate Part for Editing

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.

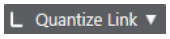
Insert Velocity

Note Insert Velocity

Allows you to specify a velocity value for new notes.

Length Quantize

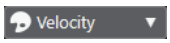
Length Quantize



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 four point arrow. 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 the **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.

Note Expression

Note expression allows you to edit MIDI notes and their expressions as one unit.

Note expression allows you to associate expression events with MIDI notes, so that they are treated as a unit. When you quantize, move, copy, duplicate, or delete MIDI notes, all of their associated controller information follows. This allows for intuitive and accurate editing of note-related data.

The following events are considered as expression events: MIDI control change, MIDI Pitchbend, MIDI Aftertouch, MIDI Poly Pressure, and VST Note Expression.

Expression event curves are displayed as an overlay of the corresponding MIDI notes in the event display. All expression events for a MIDI note are shown simultaneously.

To play and record expression events for MIDI notes, use an input controller device that supports note expression, such as MPE-compatible keyboards or MIDI guitars. If you do not have such an input controller, you can assign MIDI messages to expressions instead.

To be able to hear polyphonic performances that use expression events, use an output controller device that supports note expression, such as MPE-compatible instruments or VST note expression-compatible VST instruments. If you do not have such a device, you must set up your MIDI instrument to play the same sound on all MIDI channels.

RELATED LINKS

VST Note Expressions on page 897
MIDI Controllers on page 897
MIDI Input Devices that Support MPE on page 898

VST Note Expressions

VST note expressions are note-specific. They are suitable for polyphonic contexts, as they allow you to edit the expression of each individual note in a chord.

VST note expressions are provided by VST instruments. To work with VST note expressions, you need a VST instrument that supports them, such as HALion Sonic.

The availability of VST note expressions depends on the instrument.

VST note expressions allow for a value range that exceeds the MIDI range of 0 to 127.

You can use all MIDI channels to separate different sounds.

NOTE

To use VST note expressions to control individual notes, set the MIDI channel of the track to a value between 1 and 16.

RELATED LINKS
VST 3-Compatible VST Instruments on page 897

VST 3-Compatible VST Instruments

VST 3-compatible VST instruments that support VST note expression can be used with note expression in Cubase.

Cubase comes with a number of VST 3-compatible VST instruments, such as HALion Sonic, Retrologue, or Padshop, that include several presets.

Depending on the preset, Cubase supports specific VST note expressions such as **Tuning**, **Volume** and **Pan**.

NOTE

Retrologue and Padshop come with some sounds designed to be used with MPE. For use with note expression, you can also use the preset sounds in HALion Sonic.

For detailed information about Retrologue and Padshop and their parameters, see the separate document **Plug-in Reference**.

For detailed information about HALion Sonic and its parameters, see the separate document **HALion Sonic**.

RELATED LINKS
Loading MPE Instrument Presets on page 902

MIDI Controllers

MIDI controllers are channel-specific, with the exception of poly pressure messages. They affect the entire voice, regardless of whether they are inserted for a part or a note.

The fact that MIDI controllers are channel-specific limits the potential of note expression to monophonic (solo) performances. If you edit articulation data on one note, this affects all other notes of the same voice, that is, any other note playing on the same channel at the same time.

The MPE standard, however, allows you to assign each note to a different MIDI channel, and thereby to control notes individually. The standard recommends to use exclusively the MIDI

channel messages pitchbend, aftertouch, and CC 74 to control individual notes. In this scenario, MIDI channel 1 controls all notes, whereas the other 15 MIDI channels can control individual notes.

NOTE

To control individual notes via MIDI controllers, set the MIDI channel of the track to **Any**.

RELATED LINKS
MIDI Input Devices that Support MPE on page 898
Controller Display on page 789
Recording MIDI Control Change Messages as Note Expression Data on page 919
Converting MIDI Control Change Messages into Note Expression Data on page 919

MIDI Input Devices that Support MPE

MPE stands for MIDI Polyphonic Expression. Some MIDI devices support MPE. These are multi-dimensional MIDI controllers that allow you to vary the pitch and the timbre of individual notes while playing polyphonically.

In MPE, each note is assigned its own MIDI channel. This allows you to apply expression messages to individual notes.

To be able to work with the MPE features in Cubase, that is, to polyphonically play and record expressions, you need an appropriate MPE input device. Some MPE input devices are detected and set up automatically.

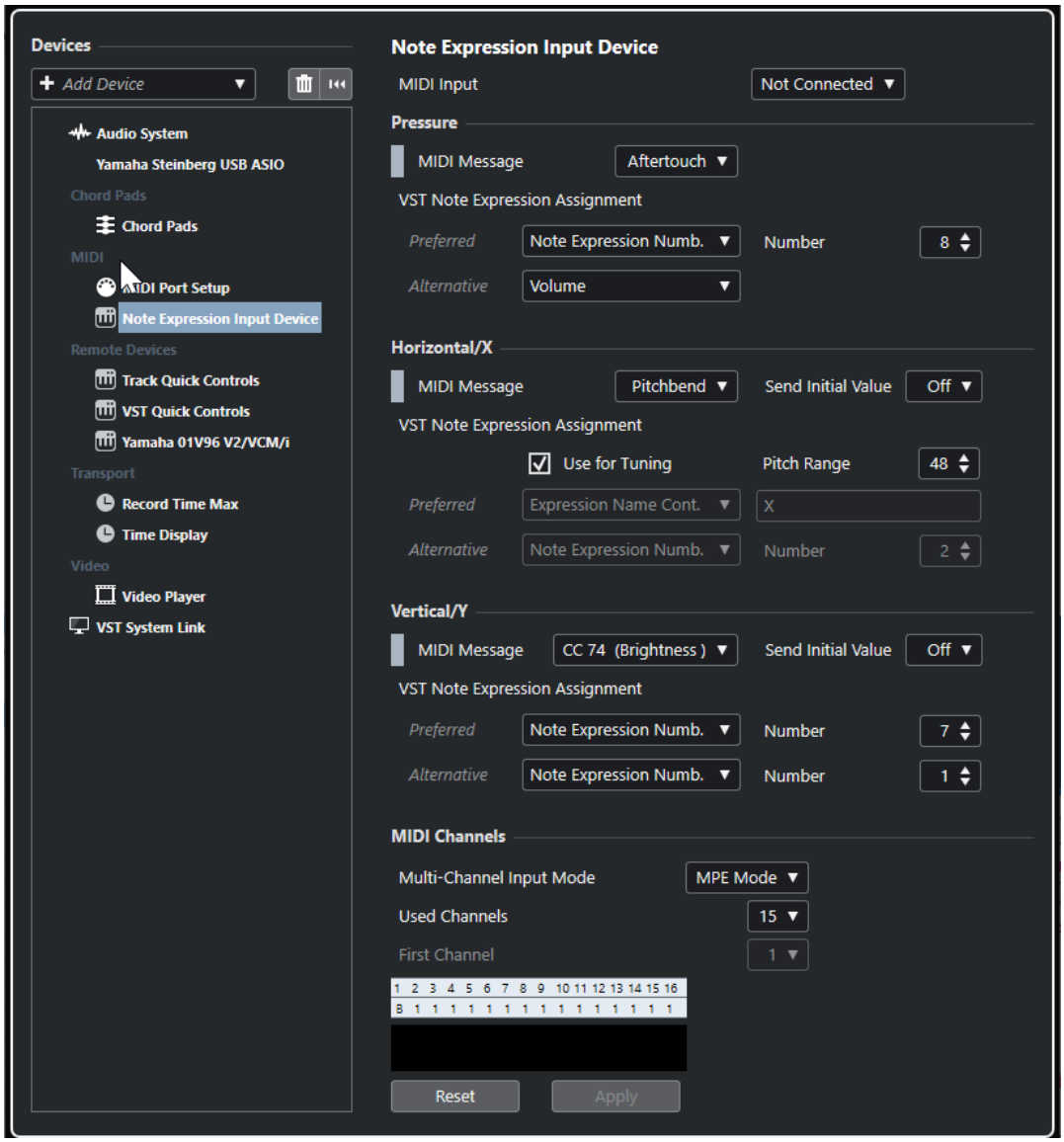
Note Expression Input Device Page

The **Note Expression Input Device** page shows the settings for your connected input device.

- To open the page for your note expression input device, select **Studio** > **Studio Setup**, and select it from the **Devices** list. If your device is not listed, click **Add**, and select **Note Expression Input Device**.

NOTE

Cubase automatically recognizes some supported note expression input devices and provides specific pages with preset settings in the **Studio Setup** dialog. If your device is set to the original factory settings, you do not have to change anything in this dialog. In some cases, you might need to set the device to the appropriate mode. This mode is often referred to as MPE mode.



Cubase allows you to capture three dimensions of input movements polyphonically. The **Note Expression Input Device** page provides the sections **Pressure**, **Horizontal/X**, and **Vertical/Y** that allow you to view and, if needed, edit which MIDI messages are used for these three dimensions of control.

The following options are available:

MIDI Input

Allows you to select the MIDI input port to which your input device is connected.

The following options are available in the **Pressure** section:

MIDI Message

Allows you to assign a MIDI message to the **Pressure** input movement on your note expression input device. The default assignment is **Aftertouch**.

VST Note Expression Assignment

Shows the assignment of MPE input movements to VST note expressions.

The following options are available in the **Horizontal/X** section:

MIDI Message

Allows you to assign a MIDI message to the **Horizontal/X** input movement on your note expression input device. The default assignment is **Pitchbend**.

Send Initial Value

Allows you to transmit the start position of the input movement to Cubase.

- **Off**

  Transmits the absolute position. This corresponds to the following initial values: Absolute: On (Sensel Morph), Relative: Off (LinnStrument).

- **Center (64)**

  Transmits the center value first. Input movements cause the value to increase or decrease. This corresponds to the following initial values: Absolute: Off (Sensel Morph), Relative: On (LinnStrument).

Use for Tuning

Activate this for fretless note expression input devices that allow you to glide seamlessly from any pitch to another pitch without interrupting the sound.

NOTE

If you activate **Use for Tuning**, the **VST Note Expression Assignment** is automatically set to **Tuning**.

Deactivate this for devices that do not support gliding but that create new notes for every key instead.

Pitch Range

Allows you to specify the pitch range of your input device. Glide from one pitch to another one, release the key, and press it again on the same position and pitch. The pitch range is set correctly.

Pressing a specific note repeatedly plays back the same pitch.

VST Note Expression Assignment

Shows the assignment of MPE input movements to VST note expressions.

The following options are available in the **Vertical/Y** section:

MIDI Message

Allows you to assign a MIDI message to the **Vertical/Y** input movement on your note expression input device. The default assignment is **CC 74 (Brightness)**.

Send Initial Value

Allows you to transmit the start position of the input movement to Cubase.

- **Off**

  Transmits the absolute position. This corresponds to the following initial values: Absolute (Seaboard Block), Absolute: On (Sensel Morph), Relative: Off (LinnStrument).

- **Min (0)**

  Transmits the minimum value first. Input movements cause the value to increase. This corresponds to the following initial values: Relative Unipolar (Seaboard Block).

- **Center (64)**

  Transmits the center value first. Input movements cause the value to increase or decrease. This corresponds to the following initial values: Relative Bipolar (Seaboard Block), Absolute: Off (Sensel Morph), Relative: On (LinnStrument).

- **Max (127)**

  Transmits the maximum value first. Input movements cause the value to decrease.

VST Note Expression Assignment

Shows the assignment of MPE input movements to VST note expressions.

The following options are available in the **MIDI Channels** section:

Multi-Channel Input Mode

Allows you to choose a multi-channel input mode. The following options are available:

- **MPE Mode**

  Activates MPE mode and sets channel 1 as the base channel.

- **Channel Rotation**

  Activates channel rotation, and assigns individual MIDI channels to incoming MIDI notes and their controller messages. This allows for a 16-voice polyphony. For this to work, your input controller must support channel rotation.

Used Channels

Allows you to set up how many channels you want to use for notes.

First Channel

Only available in **Channel Rotation** mode. This allows you to set the first channel for the channel rotation.

MIDI Activity display

Allows you to monitor incoming MIDI messages.

RELATED LINKS
VST Note Expression Assignments on page 901

VST Note Expression Assignments

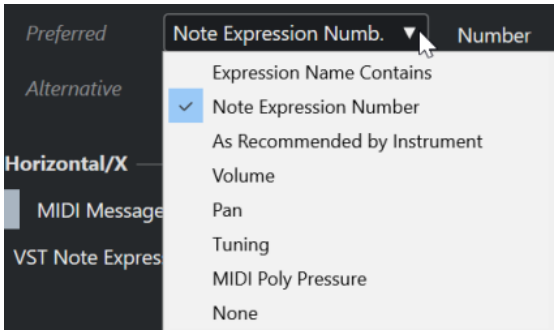
The **VST Note Expression Assignments** section shows the assignment of input movements of your note expression input device to VST note expressions.

The assignments are predefined for all supported note expression input devices that have a specific page in the **Studio Setup** dialog. You can change these assignments manually.

NOTE

The assignment is renewed when you switch either the instrument or one of its presets.

- To open the page for your note expression input device, select **Studio** > **Studio Setup**, and select it in the **Devices** list. If your device is not listed, click **Add**, and select **Note Expression Input Device**.



The following options are available as **Preferred** and **Alternative** assignments:

Expression Name Contains

Allows you to assign all note expressions to an input movement whose name contains the text that you specify in the field to the right.

Note Expression Number

Allows you to assign all note expressions to an input movement whose number corresponds to the one you specify in the field to the right.

As Recommended by Instrument

Automatically assigns all note expressions to input movements, according to the recommendations of the instrument, if available.

Volume

Assigns the note expression **Volume** to an input movement.

Pan

Assigns the note expression **Pan** to an input movement.

Tuning

Assigns the note expression **Tuning** to an input movement.

MIDI PolyPressure

Assigns the note expression **MIDI PolyPressure** to an input movement.

None

Does not assign any note expression.

RELATED LINKS

Note Expression Input Device Page on page 898

Loading MPE Instrument Presets

You can load preset MPE sounds for Retrologue and Padshop.

PROCEDURE

1. In the **Media** rack in the right zone, click the **VST Instruments** tile.
2. Do one of the following:
   - Click the **Padshop** tile, and click **MPE Padshop**.
   - Click the **Retrologue** tile, and click **MPE Retrologue**.

   The MPE instrument presets are shown.
3. Do one of the following:
   - To create a new instrument track with the loaded instrument preset, drag an instrument preset to the track list.
   - To create a new instrument track with the loaded instrument preset, drag an instrument preset to the event display.
   - To apply the preset to the track, drag an instrument preset to an instrument track.

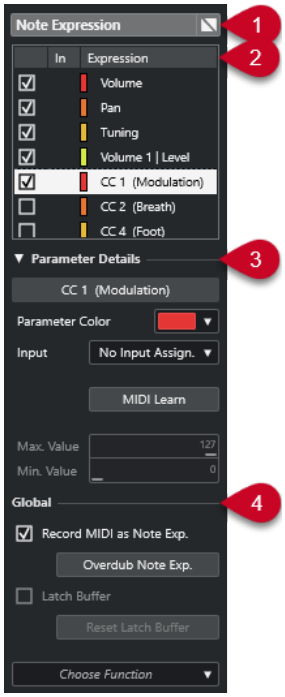
RESULT

The instrument is loaded, and the MPE preset is applied to the instrument track.

Note Expression Inspector Section

The **Note Expression Inspector** section features most of the functions that you need to work with note expression.

- To open the **Note Expression** section, select a MIDI or an instrument track, and click **Note Expression** in the **Inspector**.



The following sections are available:

1 Section header/Bypass button

Shows the section name. The bypass button allows you to bypass all note expression data for the track.

2 Expression section

Lists the available VST note expressions, MIDI controllers, pitchbend, aftertouch and polypressure.

3 Parameter Details section

Allows you to make settings for the expression that is selected in the expression section.

4 Global section

Allows you to make global settings.

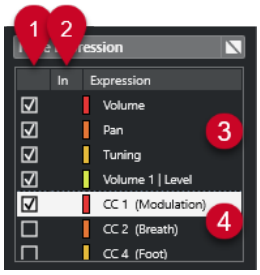
RELATED LINKS
Expression Section on page 903
Parameter Details Section on page 904
Global Section on page 905

Expression Section

The expression section shows VST note expressions and MIDI controllers. The availability of VST note expressions depends on the instrument that is used. The availability of specific MIDI control change messages depends on the settings in the **MIDI Controller Setup** dialog.

The expression section is available in the **Note Expression** section of the **Inspector**.

- To open the **Note Expression** section, select a MIDI or an instrument track, and click **Note Expression** in the **Inspector**.



The following sections and functions are available:

1 Visibility

Shows/Hides the expression in the note expression event editor and in the event display.

2 In

Shows the abbreviation of the MIDI control change message or the input movement that is mapped to the expression for recording.

3 VST note expressions

Lists the available VST note expressions.

4 MIDI controllers

Lists the available MIDI controllers.

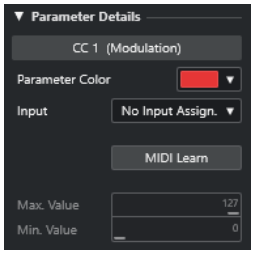
RELATED LINKS
MIDI Controller Setup Dialog on page 797

Parameter Details Section

In this section, you can make settings for the expression that is selected in the expression section, for example, set up the input assignment.

The parameter details are available in the **Note Expression** section of the **Inspector**.

- To open the **Note Expression** section, select a MIDI or an instrument track, and click **Note Expression** in the **Inspector**.



Parameter Color

Allows you to specify a color for the selected expression.

Input

Allows you to specify the input assignment for the selected expression.

MIDI Learn

Click this button, and move the fader or knob on your external MIDI controller to assign the selected expression to it.

Max. Value/Min. Value

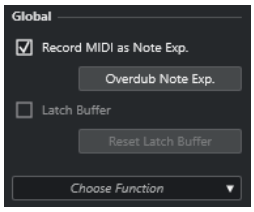
Allows you to specify a value range that is used for the selected expression.

Global Section

The settings in the **Global** section apply to all expressions in the expression section.

The **Global** section is available in the **Note Expression** section of the **Inspector**.

- To open the **Note Expression** section, select a MIDI or an instrument track, and click **Note Expression** in the **Inspector**.



Record MIDI as Note Exp.

Activate this to record MIDI controller events as note expression data.

Overdub Note Exp.

Activate this to overdub existing note expression data.

Latch Buffer

Allows you to activate/deactivate the latch buffer that is used for overdub recording.

Show Additional Functions

Shows additional functions.

- **Show only used Expressions**

  Shows only the expressions in the list for which data exists. These are marked with an asterisk (*) in front of the expression name.
- **Make all Expressions visible**

  Shows all available expressions in the event display.
- **Make only edited Expression visible**

  Shows only the selected expression in the event display.
- **Load Input Assignment**

  Allows you to load mapping presets.
- **Save Input Assignment**

  Allows you to save mapping presets.
- **MIDI Controller Setup**

  Opens a dialog that allows you to add MIDI control change messages to the list.

RELATED LINKS

Controller Mapping on page 906

Note Expression Tools

The note expression tools are available on the **Key Editor** toolbar.

Show Note Expression Data

This button is available in the **Show Note Expression Data** section of the **Key Editor** toolbar. It provides you with a visual feedback on your actions. Use the slider to the right to adjust the display size of the note expression data in the event display.

Note Expression MIDI Input

This button is available in the **Step/MIDI Input** section of the **Key Editor** toolbar. It allows you to record note expression data via MIDI input.

Acoustic Feedback

This button is available in the **Acoustic Feedback** section of the **Key Editor** toolbar. It gives you an acoustic feedback on the controller events that are present at the mouse position while you enter or change note expression data.

RELATED LINKS
Key Editor Toolbar on page 815

Controller Mapping

Before you can record VST note expression events with external keyboards, you must map or assign specific MIDI controller messages, or pitchbend and aftertouch, or input movements to expressions.

You can map the controllers via the **Inspector**, via **MIDI Learn**, or by using a mapping preset.

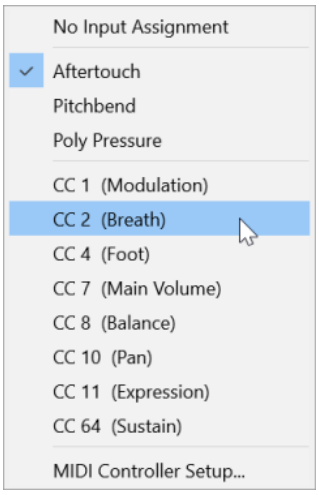
RELATED LINKS
Mapping Controllers via the Inspector on page 906
Mapping Controllers via MIDI Learn on page 907
Using Mapping Presets on page 907

Mapping Controllers via the Inspector

You can use the **Inspector** to map the knobs and faders of your MIDI instrument to expressions.

PROCEDURE

1. In the expression section, select the expression that you want to map to a MIDI controller.
2. Open the **Input** pop-up menu, and select the controller that you intend to map to the selected note expression.



3. Optional: If the controller you are looking for is not on the list, select **MIDI Controller Setup**, and activate it in the dialog.

RESULT

You can now record note expression data using the controller messages that you just assigned.

In the **In** column of the expression section, the number of the assigned MIDI controller message, or **PB** for pitchbend, or **AT** for aftertouch is shown if the mapping is active.

RELATED LINKS

Global Section on page 905
Expression Section on page 903

Mapping Controllers via MIDI Learn

The **MIDI Learn** function allows you to assign the knobs and faders of your MIDI device to controllers.

PROCEDURE

1. In the expression section, select the expression to which you want to assign a MIDI controller.
2. In the **Parameter Details** section, click **MIDI Learn**.
3. On your MIDI device, use the knob or fader that you want to assign to the selected expression.
4. Optional: Repeat this for all the expressions that you want to control with your MIDI device.

RESULT

You can now record note expression data via the controls on your MIDI device that you just assigned.

Using Mapping Presets

You can save your expression mapping as a preset and load it for later use with the same MIDI device.

PROCEDURE

1. In the **Global** section, click **Show Additional Functions** to open the pop-up menu.

2. Select **Save Input Assignment**.
3. In the file dialog that opens, specify a name and a location for the file.

RESULT

A file with the extension ***.neinput** is created.

You can load the mapping presets you created by opening the pop-up menu and selecting **Load Input Assignment**.

RELATED LINKS

Global Section on page 905

Recording

You can record note expression data with MIDI notes, or you can record note expression data for existing notes.

RELATED LINKS

Recording Notes and Note Expression Data on page 908
Recording Note Expression Data by Overdubbing on page 910
Recording Note Expression Data via MIDI Input on page 911

Recording and the Sustain Pedal

If you hold the sustain pedal (MIDI CC 64) of the connected MIDI device during recording, the following applies:

- When a note-off event is received (that is, when the key on the connected keyboard is released), this message is not sent to the VST 3 instrument but instead created by the program when the sustain pedal is released.

  This makes it possible for the VST 3 instrument to play back control change messages that are sent after a key was released.
- The release phase of the recorded notes ends when the sustain pedal is released.

NOTE

This does not apply for continuous controller messages.

Recording Notes and Note Expression Data

You can use an external MIDI device to record MIDI notes together with note expression data.

PROCEDURE

1. In the global track controls area of the track list, click **Add Track** .
2. Click **Instrument**.
3. Open the **Instrument** pop-up menu, and select HALion Sonic, for example.
4. Click **Add Track**.

   The instrument track is added to the track list, and the control panel of the selected VST instrument is opened.
5. In the **Inspector** for the instrument track, open the **Note Expression** section.

6. In the expression section, select an expression.
7. In HALion Sonic, select a preset.

   NOTE

   In the **Presets** browser, enter **noteexp** in the search field of the **Results** section to show the presets that were created especially for use with note expression.

8. Map the expressions for recording.
9. Use the mapped controls on your MIDI device to record MIDI notes with note expression data.

RESULT

The notes are recorded with the note expression data. If you activate **Show Note Expression Data** on the **Key Editor** toolbar, the note expression data is shown on the notes for which they were recorded.

RELATED LINKS

Controller Mapping on page 906
Mapping Controllers via the Inspector on page 906
Loading MPE Instrument Presets on page 902

Recording Notes and Note Expression Data with MPE Input Devices

PREREQUISITE

Your MPE input device is connected to your computer and properly set up in Cubase.

PROCEDURE

1. In the global track controls area of the track list, click **Add Track** .
2. Click **Instrument**.
3. Open the **Instrument** pop-up menu, and select HALion Sonic, for example.
4. Click **Add Track**.

   The instrument track is added to the track list, and the control panel of the selected VST instrument is opened.
5. In the top section of the **Inspector** for the instrument track, open the **Input Routing** pop-up menu, and select your MPE input device from the list.

   NOTE

   Make sure that the MIDI channel is not set to **Any**.

6. In the **Inspector**, open the **Note Expression** section.

   Make sure the expressions are properly mapped to the input movements of your MPE device.
7. Use your MPE input device to record MIDI notes, including the note expression data.

RESULT

The notes are recorded, including the note expression data. If you activate **Show Note Expression Data** on the **Key Editor** toolbar, the note expression data is shown on the notes for which they were recorded.

RELATED LINKS

MIDI Input Devices that Support MPE on page 898
Loading MPE Instrument Presets on page 902

Recording Note Expression Data by Overdubbing

You can record or replace note expression data for existing notes by overdubbing.

PREREQUISITE

Deselect all notes in the event display before you start overdubbing. This ensures that you record control change messages for all notes touched by the position cursor.

PROCEDURE

1. In the **Inspector**, open the **Note Expression** section.
2. In the **Global** section, activate **Overdub Note Exp.**.
3. Use the mapped controls on your MIDI device to record note expression data for the note that is playing.

RESULT

Only note expression data is recorded.

AFTER COMPLETING THIS TASK

Deactivate **Overdub Note Exp.** when you are done.

RELATED LINKS

Global Section on page 905

Starting Overdub Recording at Specific Controller Values

When you record note expression data by overdubbing, you can activate a **Latch Buffer**. This is useful to start recording at predefined initial knob or fader settings.

When Cubase receives controller data from an external MIDI device, the setting of the faders and knobs on the device is automatically written to the **Latch Buffer**. This data is then added to the notes during playback.

PROCEDURE

1. Map each control to one of the available VST note expressions.
2. Activate **Latch Buffer**, and set the knobs and faders on the MIDI controller to the corresponding values.
3. Activate **Overdub**.
4. Use the mapped controls on your MIDI device to record note expression data for the note that is playing.

RESULT

The values for all controls are attached to the notes that are passed during overdub recording, and they replace any existing controller data of the same type.

AFTER COMPLETING THIS TASK

Remove all values from the **Latch Buffer** by clicking **Reset Latch Buffer**.

NOTE

When you record in a cycle, the **Latch Buffer** is automatically reset at the end of the cycle.

Recording Note Expression Data via MIDI Input

You can record note expression data for existing notes via the **Note Expression MIDI Input**.

PROCEDURE

1. On the **Key Editor** toolbar, in the **Step/MIDI Input** section, activate **MIDI Input** and **Note Expression MIDI Input**.

2. Select a note, and move the active control on your MIDI device to replace the controller events for that note.

RESULT

The note is played in real time, and incoming control change messages are recorded for it. 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

Adding Release Phases to Notes on page 916

Note Expression Event Editor

The note expression event editor offers various modes for editing and adding note expression events.

- To open the note expression event editor, activate **Double-Click Opens Note Expression Editor** on the **Key Editor** toolbar, and double-click a note in the event display. If this button is not visible, right-click the toolbar, and select **Show Note Expression Data** from the menu.

  NOTE

  - In the **Key Commands** dialog in the **Note Expression** category, you can also assign a key command for **Double-Click opens Note Expression Editor On/Off**. This enables you to quickly change the double-click function from deleting notes (**Double-Click opens Note Expression Editor** is deactivated) to opening the note expression event editor (**Double-Click Opens Note Expression Editor** is activated).
  - If you select several notes in the **Key Editor** and you double-click any of them, the note expression event editor opens for all of these notes. In this case, any editing affects all the notes at the time position where you perform the editing.

- To close the editor, click in the event display.

The note expression event editor features the following controls:

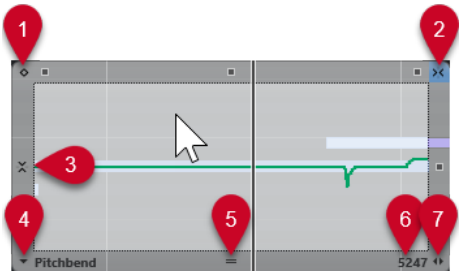
- **Note Expression controls**

  These controls allow you to select parameters and to add note expression events.
- **Smart controls**

  These controls allow you to edit the note expression events.

Note Expression Controls

The note expression event editor features the following specific note expression controls:



1 **One-Shot Mode**

If this is active and you click anywhere in the editor with the **Draw** tool, a fixed value is set.

NOTE

This mode is automatically activated for note expressions that are one-shot only.

2 **Horizontal Snap**

This corresponds to the **Snap** button in the **Project** window.

3 **Vertical Snap**

Allows you to enter the pitch in semitone steps, instead of as a continuous curve. In this manner, it is much easier to create fast pitch modulations. This is especially useful for the **Tuning** parameter.

NOTE

To temporarily switch to vertical snapping while editing, hold down **Shift**.

4 **Parameter Selection**

Shows the selected parameter. Click this to open a pop-up menu with all the parameters that are used for the note. To make more parameters available, select them in the **Inspector**.

5 **Change Editor Size**

Click this and drag up or down to change the size of the editor. This allows you to switch between 3 different window sizes.

6 **Parameter Range**

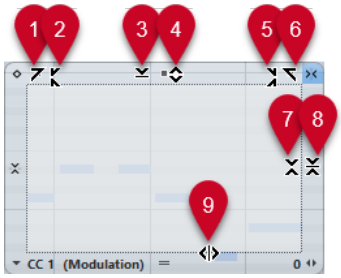
Shows the current value at the cursor position. The value range differs, depending on the parameter type.

7 **Change Release Length**

Allows you to add a release length to your note.

Smart Controls

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/Opt**-click in the upper left corner of the editor, you can compress or expand 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/Opt**-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/Opt**-click in the center of the right border 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 center of the 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.

Navigation in the Note Expression Event Editor

You can navigate to the next/previous note while the note expression event editor is open.

- To navigate to the next/previous note, use the **Left Arrow**/**Right Arrow** keys.
- To step through the notes, press **Tab** and **Shift**-**Tab**.

Adding Note Expression Events

PROCEDURE

1. Double-click a note in the event display to open the note expression event editor.
2. Do one of the following to select the parameter that you want to make settings for:
   - To create events for a parameter that has not been used yet, select the parameter in the **Inspector** to make it available in the editor.
   - To edit existing events, specify which parameter you want to edit by clicking on the curve, by selecting the corresponding parameter on the **Parameter Selection** pop-up menu, or by selecting the parameter in the **Inspector** in the **Note Expression** section.
3. Select the **Draw** or the **Line** tool, and add note expression events for the selected note.

RELATED LINKS
Adding Velocity Events on page 799

Deleting Note Expression Events

PROCEDURE

1. On the **Key Editor** toolbar, activate **Double-Click opens Note Expression Editor**.

   If this button is not visible, right-click the toolbar, and select **Show Note Expression Data** from the menu.

   NOTE

   In the **Key Commands** dialog in the **Note Expression** category, you can also assign a key command for **Double-Click opens Note Expression Editor On/Off**. In this manner, you can quickly change the double-click function from deleting notes (**Double-Click opens Note Expression Editor** is deactivated) to opening the note expression event editor (**Double-Click opens Note Expression Editor** is activated).

2. Double-click the note that contains the note expression events you want to delete.

   The note expression editor opens.
3. Optional: Open the **Parameter Selection** pop-up menu, and select the corresponding note expression from the list.
4. Drag a selection rectangle to select the range of note expression values that you want to delete.
5. Select **Edit** > **Delete**.

RESULT
The selected note expression events are deleted from the note.

RELATED LINKS
Adding Velocity Events on page 799

Pasting Note Expression Events to Different Notes

You can copy all note expression events from one or more notes and paste them to one or more other notes.

PREREQUISITE

You have set up a key command for **Paste Note Expression** in the **Key Commands** dialog (**Note Expression** category).

PROCEDURE

1. Double-click the note that contains the note expression events.

   The note expression editor opens.
2. Select the note expression events that you want to copy.
3. Select **Edit** > **Copy**.
4. Select the note to which you want to paste the note expression events.
5. Press the key command that you assigned to the **Paste Note Expression** command.

RESULT

All copied note expression events are pasted to the selected note.

If you copied note expression events from several source notes and pasted them to a number of destination notes, the following applies:

- If the number of the source and destination notes matches, the events of the first source note are pasted into the first destination note, the events of the second source note into the second destination note, and so forth.
- If the number of source notes is smaller than the number of destination notes, the source note events are repeatedly pasted into the destination notes in the order in which they appear.

  When you copy the events from 2 source notes into 4 destination notes, for example, the first destination note inherits the note expression events from the first source note, the second destination note inherits the events of the second source note, the third destination note inherits the events of the first source note, and the 4th destination note inherits the events of the second source note.

RELATED LINKS

Key Commands on page 1094

Pasting Note Expression Events to Different Parameters

You can copy note expression events from one parameter and paste them to a different parameter.

PROCEDURE

1. Double-click the note that contains the note expression events to open the note expression event editor.
2. Select the note expression events of the parameter that you want to copy.
3. Select **Edit** > **Copy**.
4. Select the parameter to which you want to paste the note expression events.
5. Select **Edit** > **Paste**.

RESULT

All copied note expression events are pasted to the selected parameter.

Repeating Note Expression Events

PROCEDURE

1. Double-click the note that contains the note expression events to open the note expression event editor.
2. Open the **Parameter Selection** pop-up menu, and select the corresponding note expression from the list.
3. Drag a selection rectangle to select the events that you want to repeat.
4. Click the selection. With the mouse button pressed, press **Alt** and drag.

RESULT

The selected events are copied.

Moving Note Expression Events

PROCEDURE

1. Double-click the note that contains the note expression events to open the note expression event editor.
2. Open the **Parameter Selection** pop-up menu, and select the corresponding note expression from the list.
3. Do one of the following:
   - Click the note expression event curve, and drag to move all events.
   - Drag a selection rectangle to select events, and drag to move the selected events.

   NOTE

   To restrict the direction to vertical or horizontal, you can press **Ctrl/Cmd** while dragging.

Adding Release Phases to Notes

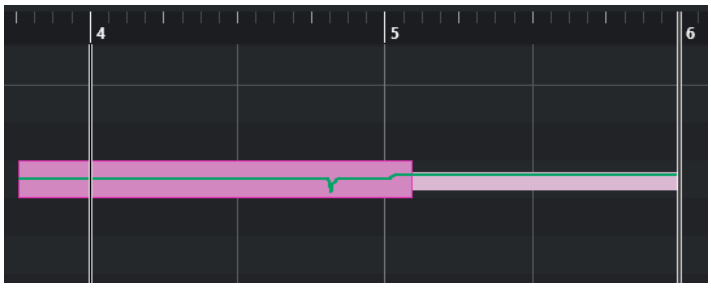
You can add a release phase to a note. This allows you to work on the tail of a note which is still sounding after the note-off message was sent, for example.

PROCEDURE

1. Double-click a note in the event display to open the note expression event editor.
2. Click and drag the **Change Release Length** control in the lower right corner of the editor to add a release phase.

RESULT

The release phase is added to the note.



NOTE

You can change the release phase for several notes by opening the editor for these notes. Hold down **Alt** while setting the release length.

AFTER COMPLETING THIS TASK

Add controller events in the release phase by overdubbing or by manually entering note expression events in the editor. When you overdub note expression events, the length of the existing release phase is used to associate newly recorded events to the notes.

NOTE

If you hold the sustain pedal of your external device during recording, the notes automatically get a corresponding release phase.

Trimming Note Expression Data

You can trim note expression data to automatically match the note length.

PROCEDURE

1. Select the notes that contain note expression data.
2. Select **MIDI** > **Note Expression** > **Trim Note Expression to Note Length**.

RESULT

The note expression data is trimmed to the note length, and any data present after the end of the release phase is deleted.

Removing All Note Expression Data

You can delete all note expression data from the selected MIDI note or part.

PROCEDURE

1. Select the MIDI note or the MIDI part that contains the note expression data that you want to delete.
2. Select **MIDI** > **Note Expression** > **Remove Note Expression**.

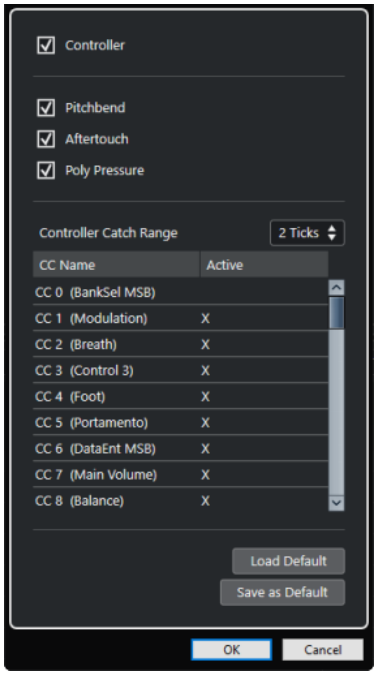
RESULT

The note expression data is removed.

Note Expression MIDI Setup Dialog

The **Note Expression MIDI Setup** dialog allows you to specify which MIDI messages are used when you record MIDI control change messages as note expression data or convert them.

- To open the **Note Expression MIDI Setup** dialog, select **MIDI** > **Note Expression** > **Note Expression MIDI Setup**.



The following options are available:

Controller

Activates MIDI control change messages. Specify the MIDI control change messages that you want to use in the list below.

NOTE

MIDI controller data for deactivated MIDI control change messages ends up on the controller lane.

Pitchbend

Activates pitchbend data.

Aftertouch

Activates aftertouch data.

Poly Pressure

Activates poly pressure data.

Controller Catch Range

Allows you to enter a controller catch range in ticks. This is useful to associate control change messages with a note, even if they were sent just before the note-on message.

Load Default

Allows you to load the default settings.

Save as Default

Allows you to save the current settings as default settings.

Recording MIDI Control Change Messages as Note Expression Data

You can record MIDI control change messages as note expression data.

PROCEDURE

1. In the **Inspector**, open the **Note Expression** section, and activate **MIDI as Note Expression**.
2. Optional: Set the MIDI track to the **Any** channel.

   MIDI control change messages, with the exception of poly pressure, are channel-specific. By splitting polyphony to separate channels, you can avoid conflicting controller messages.
3. Enter the notes and the control change messages on your MIDI device.

RESULT

The controller data is now associated with the notes. If you copy, paste, and move the notes, the associated controller data follows.

NOTE

To edit the MIDI notes after recording, you might need to consolidate the controller data.

RELATED LINKS

Consolidating Note Expression Overlaps on page 920

Converting MIDI Control Change Messages into Note Expression Data

You can convert the MIDI control change messages on controller lanes into note expression data.

PREREQUISITE

The MIDI control change messages that you want to record are activated in the **Note Expression MIDI Setup** dialog. You have a MIDI part with controller data written on controller lanes.

PROCEDURE

1. Open the **Key Editor** for the MIDI part.
2. Select **MIDI** > **Note Expression** > **Convert to Note Expression**.

RESULT

The MIDI control messages contained in the controller lanes are converted to note expression data, and the data on the controller lanes is deleted.

Cubase searches for notes that sound at the same time as the control change messages. If several notes play at the same time, the same note expressions are attributed to them, with the same values. Release phases are automatically created where necessary, so that no controller data is lost during this process.

IMPORTANT

To edit the MIDI notes after the conversion, you might need to consolidate the controller data.

RELATED LINKS

Note Expression MIDI Setup Dialog on page 918
Adding Release Phases to Notes on page 916

Consolidating Note Expression Overlaps

If you move or quantize notes so that they overlap, and if these overlapping notes contain data for the same control change message, you might need to consolidate the note expression overlaps.

PROCEDURE

- Select **MIDI** > **Note Expression** > **Consolidate Note Expression Overlaps**.

RESULT

If the overlapping notes contain data for the same control change message, the controller values of the second note are used from the beginning of the overlap.

If a note is positioned entirely within a longer note and if these notes contain controller data for the same control change message, the controller values of the longer note are used until the encompassed note starts.

Distributing Notes to Different Channels

You can distribute notes to different channels. This allows you to use the note expression functions, even if you do not have a VST 3 instrument.

PREREQUISITE

You have added a multitimbral instrument and assigned the same sound to different channels.

PROCEDURE

1. In the **Inspector** for the corresponding MIDI track, open the **Channel** pop-up menu, and select **Any**.
2. In the **Inspector**, open the **Note Expression** section.
3. Enable **MIDI as Note Expression**.
4. Record or enter MIDI notes with expressions, as needed.
5. Select **MIDI** > **Note Expression** > **Distribute Notes to MIDI Channels**.

RESULT

The MIDI notes are distributed to different channels, starting at channel 1. You can now edit the note expression for individual notes without any conflicts.

Converting Note Expression Data to MIDI Controller Data

You can convert note expression data of MIDI controller parameters to MIDI controller data on controller lanes.

PROCEDURE

- Select **MIDI** > **Note Expression** > **Dissolve Note Expression**.

RESULT

The note expression data is converted. If you open the controller display and show the controller lanes for the corresponding event type, the data is displayed.

NOTE

If you convert note expression data of VST note expressions to MIDI, the sound changes. Therefore, you must reassign the MIDI controller data to a new instrument destination.

Chord Functions

The chord functions offer 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 MIDI playback.
- Use the chord track voicing to change the pitches of your MIDI.
- Extract chord events from MIDI data to obtain an overview of the harmonic structure of a MIDI file.
- Extract chord events from audio events.
- Record chord events with a MIDI keyboard.

RELATED LINKS
Adding Chord Events on page 923
Converting Chord Events to MIDI on page 938
Creating Chord Events from MIDI on page 942
Recording Chord Events with a MIDI Keyboard on page 945
Creating Chord Events from Audio Events on page 944
Chord Editing Section on page 840

Chord Track

The chord track allows you to add chord events and scale events.

RELATED LINKS
Scale Events on page 932
Chord Events on page 923
Musical Scale Setup Dialog on page 933
Adding the Chord Track on page 922

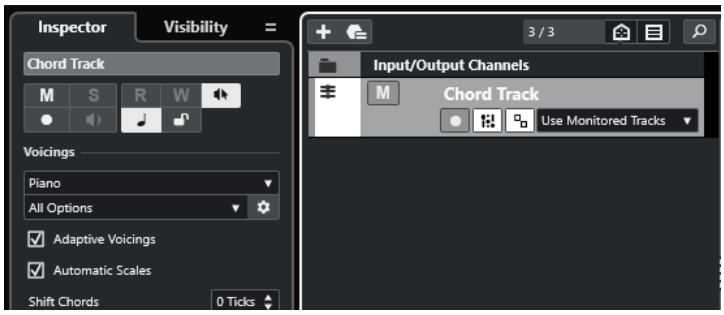
Adding the Chord Track

PROCEDURE

- Select **Project** > **Add Track** > **Chord**.

RESULT

The chord track is added to your project.



RELATED LINKS
Chord Track on page 922
Adding Chord Events on page 923

Chord Events

Chord events are representations of chords that allow you to control or transpose playback on MIDI, instrument, and audio tracks.

Chord events alter the pitches of MIDI notes and VariAudio segments, in case 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. Chord type
3. Tensions
4. Bass note

RELATED LINKS
Controlling MIDI Playback Using the Chord Track on page 938
Chord Editor on page 924

Adding Chord Events

PREREQUISITE

You have added a 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. Open the **Editor** tab, and select a root note from the leftmost column.
   The chord event on the chord track changes accordingly.

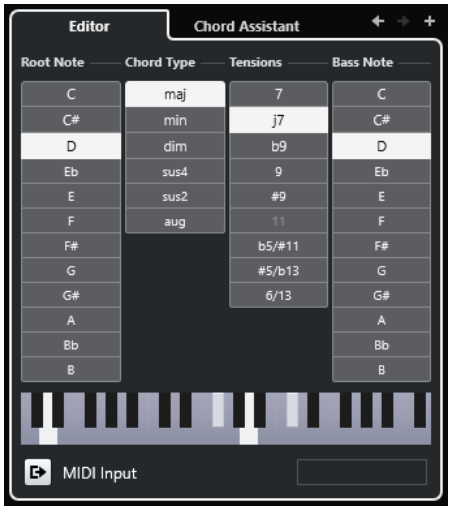
4. Optional: Select a chord type, one or more tensions, and a bass note.
5. Optional: Click **Add Chord** or press **Tab** to add a new unassigned chord event to the chord track.
6. Repeat the steps above to assign a chord to the new event.
7. To close the **Editor**, click outside the **Editor**.

RELATED LINKS
Adding the Chord Track on page 922
Chord Editor on page 924
Changing How Chord Events Are Displayed on page 932
Auditioning Chord Events on page 931

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.



Go to Previous Chord/Go to Next Chord

Allows you to select the previous/next chord on the chord track for editing.

Add Chord

Adds a new unassigned chord event on the chord track.

NOTE

This only works if the last chord event on the chord track is selected.

Chord definition buttons

Activate these buttons to define a root note, a chord type, one or more tensions, 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.

Keyboard display

Shows the notes of the chord event, including the current voicing settings.

Activate MIDI Input

Allows you to define a chord by playing a chord on your MIDI keyboard. If the chord is recognized, the respective chord definition buttons and the keyboard display are highlighted.

Define Chord by Text Input

Allows you to define a chord via computer keyboard.

RELATED LINKS
Assigning Chords by Text Input on page 925
Chord Events on page 923

Assigning Chords by Text Input

In the chord **Editor**, you can use the text input field to assign 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 in the **Preferences** dialog (**Event Display—Chords&Pitches** page), you can also enter chords in this format. To do so, capitalize the first letter and write “Re” instead of “re”, for example. Otherwise, the chord is not recognized.
4. Do one of the following to add a new unassigned chord, and assign it:
   - Press **Tab**.
   - Click **Add Chord**.

RELATED LINKS
Chord Editor on page 924
Chord Events on page 923

Chord Assistant

The **Chord Assistant** helps you to find chords that you can apply to the selected chord event.

- To open the **Chord Assistant**, double-click a chord event, and click **Chord Assistant**.

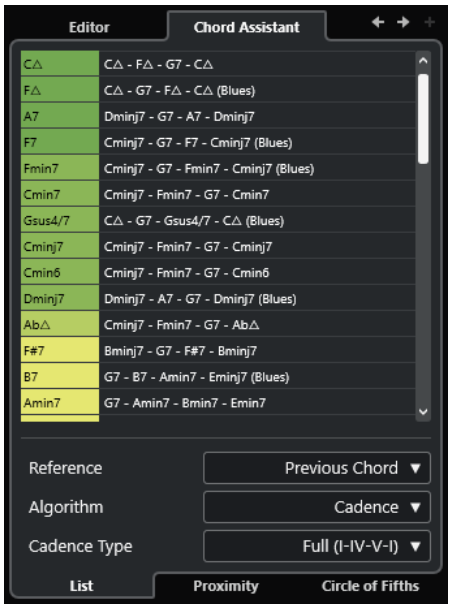
RELATED LINKS
List Assistant on page 926
Proximity Assistant on page 927
Circle of Fifths Assistant on page 929

Chord Assistant – Detected on page 930

List Assistant

The **List** assistant allows you to create chord progressions based on harmonic rules that can be simple or complex.

- To open the **List** assistant, double-click a chord event, click **Chord Assistant**, and click **List**.



Go to Previous Chord/Go to Next Chord

Allows you to select the previous/next chord on the chord track for editing.

Add Chord

Adds a new unassigned chord event on the chord track.

NOTE

This only works if the last chord event on the chord track is selected.

Suggestions list

Displays suggestions for the next chord. Click a chord suggestion to select it.

Reference

NOTE

This is only available if you select an unassigned chord in between 2 assigned chords.

Select **Previous Chord** to get suggestions for the next chord, based on the previous chord.

Select **Previous & Next Chord** to get suggestions for chords in between 2 assigned chords, based on the previous and the following chord.

Algorithm

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 you want the chords to share. The suggested chords and the colors change accordingly.

Cadence Type

Allows you to select a cadence type for the suggestions. As a result, only the chords with specific harmonic functions are suggested. The suggested chords and the colors change accordingly.

NOTE

These options are only available if you select **Cadence** as the **Algorithm**.

RELATED LINKS
Chord Assistant on page 925
Proximity Assistant on page 927
Circle of Fifths Assistant on page 929
Chord Assistant – Detected on page 930

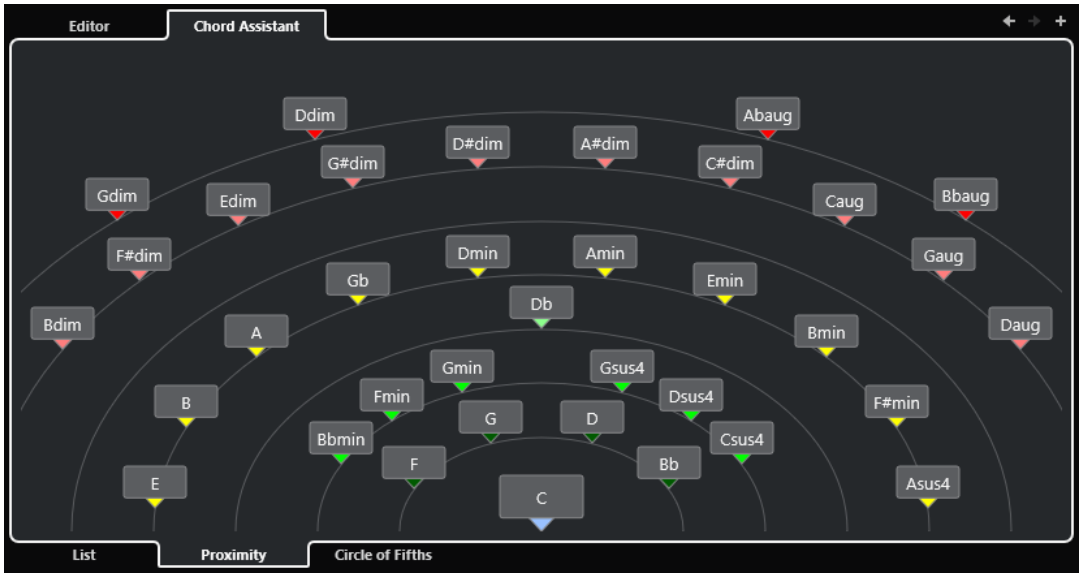
Proximity Assistant

The **Proximity** assistant uses a set of harmonic rules, in order to offer you suggestions that match the reference chord.

If you open the **Chord Assistant** for a chord event, the previous event is set as reference chord.

The reference chord is displayed at the bottom, in the center of the **Chord Assistant** window. The further away a chord suggestion is situated from this chord, the more complex the suggestion.

- To open the **Proximity** assistant, double-click a chord event, click **Chord Assistant**, and click **Proximity**.



- To audition a suggestion and assign the chord to the selected chord event, click it.

  The last 3 suggested chords that you clicked are shown in bold.

NOTE

- If you hover the mouse pointer over one of the suggestions in the **Chord Assistant**, a tooltip with suggestions for progressions is shown.
- The **Proximity** assistant is subject to the same rules as the **List** assistant.

RELATED LINKS
Chord Assistant on page 925
List Assistant on page 926
Circle of Fifths Assistant on page 929
Chord Assistant – Detected on page 930

Adding Chord Events Based on Suggestions

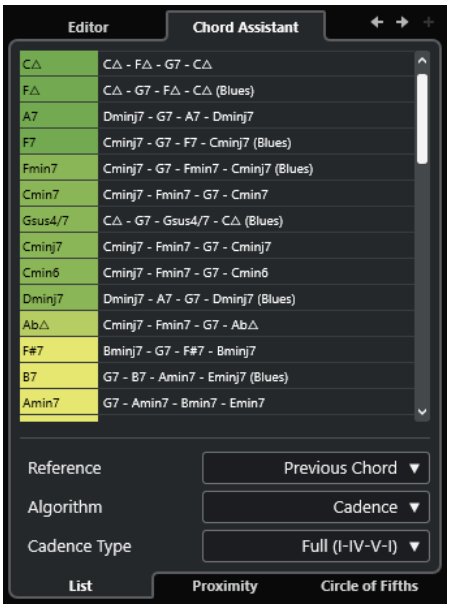
If you do not know what your chord progression should look like, you can use the **Chord Assistant** to obtain suggestions for the following chords.

PREREQUISITE

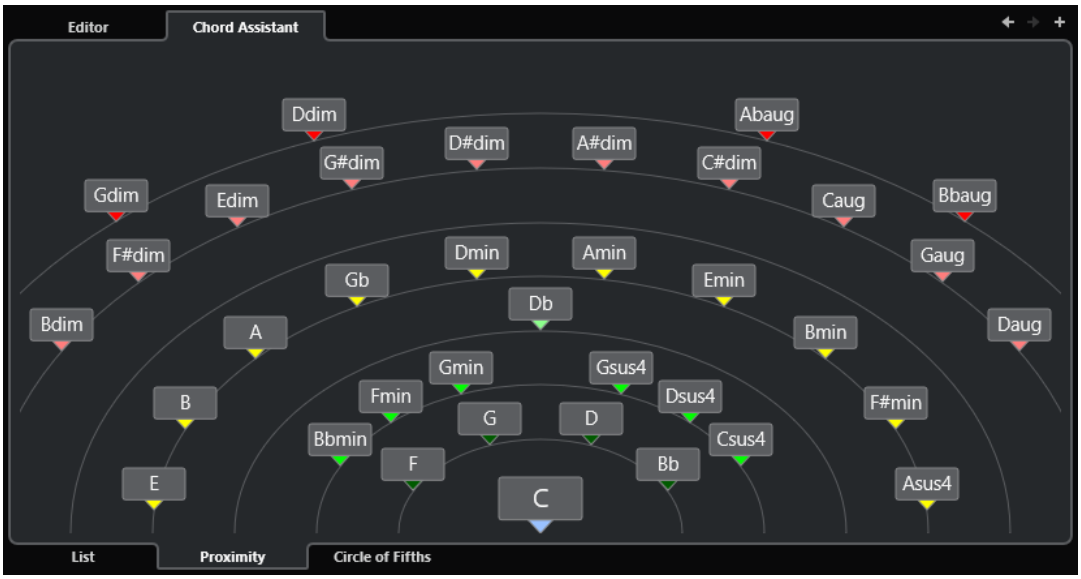
You have added a chord event on the chord track.

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 **List**.



   - To display the suggestions graphically, click **Proximity**.



5. Click a suggestion to select a chord.

RESULT

The suggested chord is added to the chord track. Repeat the steps above to create as many chord events as required by your harmonic structure as a chord event.

RELATED LINKS

List Assistant on page 926
Proximity Assistant on page 927

Circle of Fifths Assistant

The **Circle of Fifths** assistant displays the chords in an interactive visualization.

- To open the **Circle of Fifths** assistant, double-click a chord event, click **Chord Assistant**, and click **Circle of Fifths**.
- The chord that defines the current key, which is shown at the top, in the center of the **Circle of Fifths**, is marked as the tonic (I).
- 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, or you can use the other chords for more creative results.
- To play a chord and to assign it to the selected chord event, click it.

  The last 3 chords that you clicked are displayed in bold.
- To define a new key, right-click the chord, and select **Use as Origin**.
- To select the parallel minor chord and to define it as the key, open the **Major/Minor** pop-up menu and select an option.

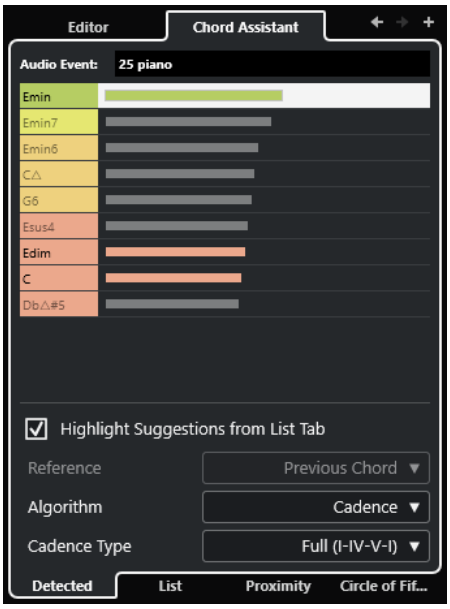
RELATED LINKS

Chord Assistant on page 925
List Assistant on page 926
Proximity Assistant on page 927
Chord Assistant – Detected on page 930

Chord Assistant – Detected

The **Detected** tab of the **Chord Assistant** is only available if you created chord events from audio events. It lists the detected chord for the selected chord event and alternative results.

- To open the **Detected** tab of the **Chord Assistant**, double-click a chord event that was created from an audio event, click **Chord Assistant**, and click **Detected**.



NOTE

Chord events that were created from audio events are indicated by a symbol in the upper right corner of the event.

Go to Previous Chord/Go to Next Chord

Allows you to select the previous/next chord on the chord track for editing.

Add Chord

Adds a new undefined chord event on the chord track.

NOTE

This only works if the last chord event on the chord track is selected.

Audio Event

The name of the audio event from which the chord events were detected.

Chord list

Shows the detected chord for the selected chord event on top, and alternative results further down the list. Click a chord to audition it, and assign it to the selected chord event.

Highlight Suggestions from List Tab

Highlights the suggestions from the **List** assistant in the chord list.

Algorithm

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 you want the chords to share. The suggested chords and the colors change accordingly.

Cadence Type

Allows you to select a cadence type for the suggestions. As a result, only the chords with specific harmonic functions are suggested. The suggested chords and the colors change accordingly.

NOTE

These options are only available if you select **Cadence** as the **Algorithm**.

RELATED LINKS

Chord Assistant on page 925
List Assistant on page 926
Proximity Assistant on page 927
Circle of Fifths Assistant on page 929
Creating Chord Events from Audio Events on page 944

Auditioning Chord Events

To audition the chord events on the chord track, connect the chord track to the output of an instrument or a MIDI track.

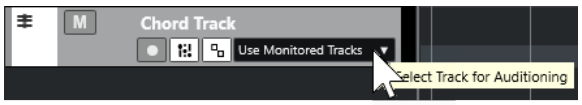
PREREQUISITE

You have added a chord track and chord events.

PROCEDURE

1. In the global track controls area of the track list, click **Add Track** .
2. Click **Instrument**.
3. Open the **Instrument** pop-up menu, and select a VST instrument.
4. Click **Add Track**.

   The instrument track is added to the track list, and the control panel of the selected VST instrument is opened.
5. Select a sound.
6. In the chord track **Inspector**, activate **Acoustic Feedback**.
7. In the track list, open the **Select Track for Auditioning** pop-up menu, and 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.

RELATED LINKS

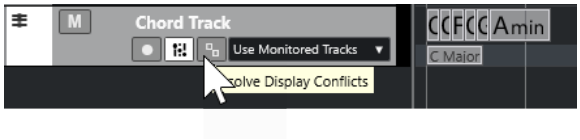
Chord Track on page 922
Adding Chord Events on page 923
Add Track Dialog – Instrument on page 112

Changing How Chord Events Are Displayed

You can change the way chord events are displayed. This is useful if chord events overlap at low zoom levels or if you do not like the font type.

PROCEDURE

1. On the chord track, activate **Resolve Display Conflicts**.



2. In the **Preferences** dialog, select **Event Display** > **Chords&Pitches**, and set up the chord font.

   You can also determine the note name and the naming format.

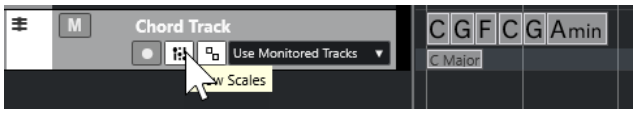
RELATED LINKS
Adding Chord Events on page 923

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 the scale event.

You can also add and edit scale events manually.

Scale events have a specific starting position. Their end is determined by the start of the next scale event.

RELATED LINKS
Editing Scale Events on page 932

Editing Scale Events

PREREQUISITE

You have added a chord track and chord events. You have deactivated **Automatic Scales** in the chord track **Inspector**.

PROCEDURE

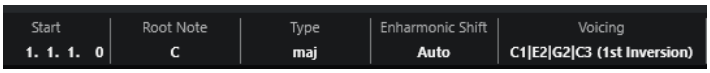
1. On the chord track, activate **Show Scales**.

   The scale lane is displayed.

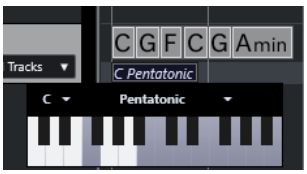
2. Select the chord event.

   A scale event is shown on the scale lane.

3. Do one of the following:
   - Click the first scale event on the chord track. On the info line, select a **Root Note** and **Type**.



   - Double-click the scale event. In the keyboard that appears, select a **Root Note** and a scale.



     The keys that correspond to the scale are highlighted.

RELATED LINKS
Scale Events on page 932
Scale Assistant in the Key Editor on page 825

Musical Scale Setup Dialog

The **Musical Scale Setup** dialog allows you to set up and manage musical scales.

- To open the **Musical Scale Setup** dialog, select **Project** > **Chord Track** > **Set up Musical Scales**.

Add Scale

Adds a new scale to the list. Use the keyboard display to define the scale pitches. All scales start with C as a root note.

Factory Defaults

Resets all scales.

Use

Activates a scale.

NOTE

Activated musical scales are used in the chord track, in the **Scale Assistant** section of the **Key Editor Inspector**, in the **Transpose Setup** window, and in the **MIDI Modifiers** section of the **Inspector**.

Name

Shows the name of the scale. Double-click to change it.

Scales

Shows a keyboard that allows you to define the scale pitches. Click a key to activate/deactivate a pitch for a scale. All scales start with C as a root note.

Preview Scale

Plays back the scale.

NOTE

For playback, the selected MIDI or instrument track must be record-enabled and its output must be routed to an instrument.

Information

Informs you if the scale matches another scale or if it has the same name as another scale.

Remove Scale

Removes the corresponding scale from the scale suggestions.

NOTE

All changes apply to the entire application. This allows you to customize scales once and to use them in all projects. However, if you remove or rename scales that are used in other projects, the scales cannot be retrieved.

RELATED LINKS

Chord Track on page 922
Scale Assistant in the Key Editor on page 825
Transpose Setup Dialog on page 767
MIDI Modifiers Section on page 750
Scale Events on page 932

Voicings

Voicings determine how chord events are set up. They define the vertical spacing and the order of the pitches in a chord, as well as the instrumentation and the genre of a musical piece.

For example, a C chord can be spread over a wide range of pitches, and a pianist chooses different notes than a guitarist. The pitches the pianist plays may also depend on the musical genre.

- You can set up voicings 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.

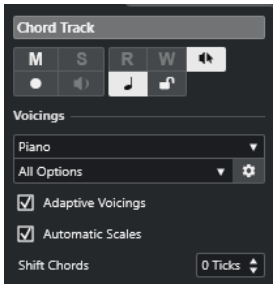
  NOTE

  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.

RELATED LINKS
Inspector Settings for Voicings on page 935
Custom Voicing Panel on page 936

Inspector Settings for Voicings

To set up voicings for the entire chord track, you can use the chord track **Inspector**.



Voicing library

Allows you to select **Guitar**, **Piano**, or **Basic** as a voicing library.

Voicing library subset

NOTE

This is only available if **Guitar** or **Piano** is set as the voicing library.

Allows you to select a preset voicing library subset.

Configure voicing parameters

Opens the **Custom Voicing** panel that allows you to configure your own voicing parameters for a specific voicing scheme.

Adaptive Voicings

Activate this to let Cubase set the voicings automatically. This prevents the individual voices from jumping too much.

Automatic Scales

Activate this to let Cubase set the scales automatically.

Shift Chords

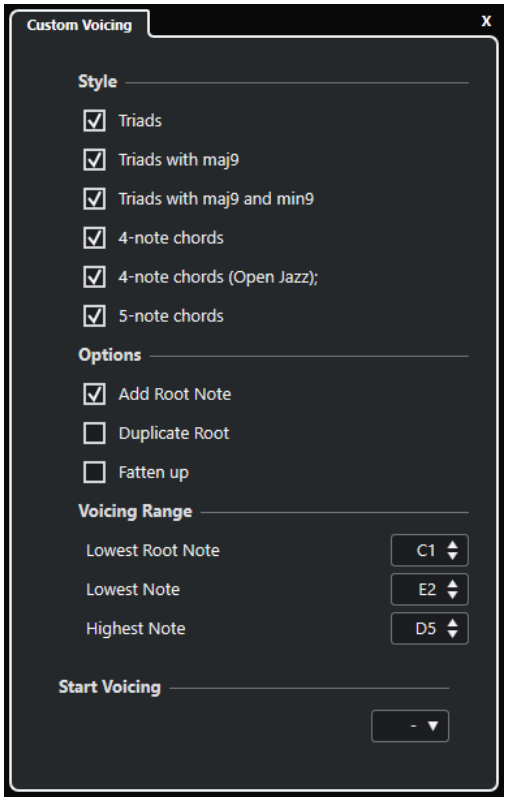
If you enter a negative number of ticks, the chord events affect the MIDI notes that have been triggered too early.

RELATED LINKS
Voicings on page 935
Custom Voicing Panel on page 936

Custom Voicing Panel

If you click **Configure voicing parameters** in the **Chords** section of the **Inspector**, you can configure your own voicing parameters for a specific voicing scheme.

- To open the **Custom Voicing** panel, click **Configure voicing parameters** in the **Chords** section of the **Inspector**.



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 fewer than 3 notes are not changed.

4-Note Chords (Open Jazz)

Sets a 4-note chord without root note and without fifth. Chords with fewer than 3 notes are not changed.

5-Note Chords

Sets a 5-note chord with a ninth. Chords with fewer 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, with the exception of the root note.

Highest Note

Sets the limit for the highest note, with the exception of 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.

In the **Start Voicing** section for **Piano**, **Guitar**, and **Basic** voicings, you can select a start voicing.

NOTE

This is only available for MIDI and instrument tracks, but not for the chord track, and only if you select **Voicings** in the **Follow Chord Track** pop-up menu.

RELATED LINKS

Voicings on page 935
Inspector Settings for Voicings on page 935

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. In the global track controls area of the track list, click **Add Track**.
2. Do one of the following to specify the destination track for your chord events:
   - Select an instrument or MIDI track.
   - Click **Instrument** to add an instrument track.
   - Click **MIDI** to add a MIDI track.
3. Click **Add Track**.
4. Do one of the following:
   - To convert only selected chords to MIDI, select the chord events, and drag them to the MIDI or instrument track.
   - To convert all chord events to MIDI, select **Project** > **Chord Track** > **Chords to MIDI**.

RESULT

A new MIDI part is created on the selected instrument or MIDI track. It contains the chords as MIDI events.

RELATED LINKS

Add Track Dialog – Instrument on page 112
Add Track Dialog – MIDI on page 115

Assigning Chord Events to HALion Sonic Pads

You can trigger chord events via HALion Sonic pads.

PREREQUISITE

Create a chord progression on the chord track, and add an instrument track with HALion Sonic as the VST instrument to your project.

PROCEDURE

1. On the chord track, select the chord events, and drag them to the HALion Sonic pads.

   NOTE

   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 keyboard to trigger the chords.

Controlling MIDI Playback Using the Chord Track

You can use the chord track to control MIDI playback.

RELATED LINKS

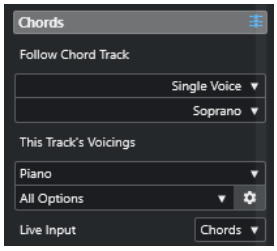
Chords Section for MIDI Tracks on page 939

Using Live Input on page 939
Using Follow Chord Track on page 940
Using Map to Chord Track on page 942

Chords Section for MIDI Tracks

The **Chords** section in the MIDI track **Inspector** allows you to determine how the events on the MIDI track are mapped to the chord track.

- To open the **Chords** section for a MIDI track, select the track, and in the **Inspector**, click the **Chords** section.



Follow Chord Track

Select an option to determine how the events on your track are mapped to the chord track.

This Track's Voicings

Allows you to select a voicing library or to use the voicings from the chord track. This is only available if you selected **Voicings** or **Single Voice** in the **Follow Chord Track** pop-up menu.

Live Input

Allows you to transpose the MIDI input to a chord progression on the chord track.

RELATED LINKS
Using Follow Chord Track on page 940
Follow Chord Track Modes on page 940
Using Live Input on page 939

Using Live Input

Live Input 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 to hit on your MIDI keyboard, as the MIDI input is transposed to match chords or scales on your chord track in real time.

PROCEDURE

1. Create a MIDI or an instrument track, and activate **Record Enable**.
2. Right-click an empty area of the **Inspector**, and select **Set up Sections**.
3. In the **Set up Sections** pane, activate **Chords**.
4. In the **Inspector**, open the **Chords** section.
5. Open the **Live Input** 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**.
6. Hit some keys on your MIDI keyboard or on the **On-Screen Keyboard**.

RESULT

Any key that you hit is mapped to the chord or the scale events on the chord track in real time.

RELATED LINKS

Scale Assistant in the Key Editor on page 825
Mapping Incoming MIDI Note Pitches to Musical Scales on page 833

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 changes.
5. Click **OK**.

RESULT

The events on your track now match the chord progression on the chord track.

NOTE

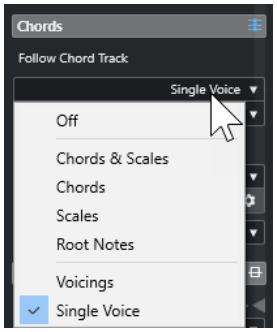
If you matched your MIDI track to the chord track, some of the original MIDI notes may be muted. To hide these notes in the editors, activate **Hide Muted Notes in Editors** in the **Preferences** dialog (**Editing—Chords** page).

RELATED LINKS

Follow Chord Track Dialog on page 941
Follow Chord Track Modes on page 940

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 to the notes of a single voice (soprano, tenor, bass, etc.) of the voicing. Use the pop-up menu below to select the voice.

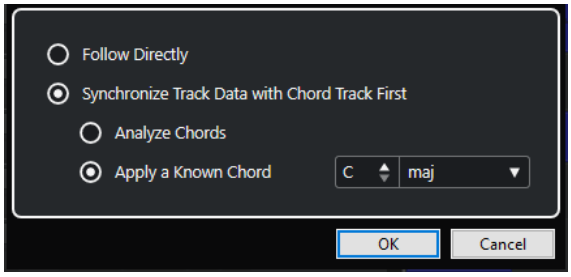
NOTE

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 942

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 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 Events**, 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.

RELATED LINKS
Creating Chord Events from MIDI on page 942
Create Chord Events Dialog on page 943

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 940

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.

Creating 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

- You have added a chord track.

- On a MIDI track, you have created a MIDI part with MIDI events that can be interpreted as chords.

  NOTE

  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 create in the **Key Editor**, **Score Editor**, or **In-Place Editor**.
2. Do one of the following:
   - Drag the MIDI part and drop it on the chord track.
   - Right-click a MIDI part, and select **Create Chord Events** from the context menu.
   - Select **Project** > **Chord Track** > **Create Chord Events**.
3. In the **Create Chord Events** dialog, make your changes and click **OK**.

RESULT

The chord events are added to the chord track.

AFTER COMPLETING THIS TASK

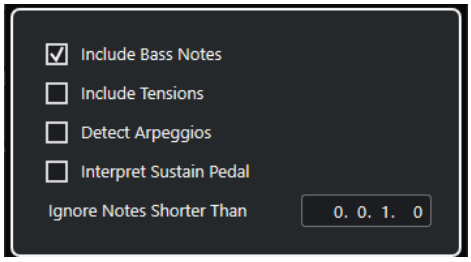
Use the **Chord Assistant** to create variations.

RELATED LINKS

Create Chord Events Dialog on page 943
Creating Chord Events from Audio Events on page 944
Chord Editing Section on page 840

Create Chord Events Dialog

This dialog allows you to determine which MIDI data to take into account when creating 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.

RELATED LINKS
Chord Editing Section on page 840
Creating Chord Events from MIDI on page 942

Creating Chord Events from Audio Events

You can extract chords from audio events. This is useful if you have an audio file and want to show its harmonic structure, and use this file as a starting point for further experimenting.

PREREQUISITE

- You have added a chord track.
- On an audio track, you have added an audio event with audio material that can be interpreted as chords, that is, with three or four different note pitches playing simultaneously.

  NOTE

  The audio material should contain western music with 12 pitches per octave, tuned in equal temperament.

PROCEDURE

1. In the **Project** window, select an audio event on an audio track.

   NOTE

   You cannot use audio parts.

2. Do one of the following:
   - Drag the audio event, and drop it on the chord track.
   - Right-click an audio event, and select **Create Chord Events** from the context menu.
   - Select **Project** > **Chord Track** > **Create Chord Events**.

RESULT

- The chord events are added to the chord track.

  NOTE

  Depending on the length of the audio event, this may take a while.

- The chord events that you created from audio events are indicated by a symbol in the upper right corner.
- The created chord events match the positions and lengths of the corresponding chords in the audio event.

- If the chord track already contained chord events, these are replaced within the position and length of the audio event. Chord events outside that range are maintained.

RELATED LINKS
Editing Chord Events That Were Detected from Audio Events on page 945
Chord Assistant – Detected on page 930
Creating Chord Events from MIDI on page 942

Editing Chord Events That Were Detected from Audio Events

If you are not satisfied with the chord events that were detected from audio events, you can edit them. The algorithm provides several possible results for chord types.

PREREQUISITE

- You have detected chord events from audio events.
- You have connected the chord track to the output of an instrument or a MIDI track. This allows you to audition the chords.

PROCEDURE

1. Double-click the detected chord event that you want to edit.
2. Click **Chord Assistant**, and click **Detected**.
   A list of the detected chords ranked from top to bottom is shown.
3. Optional: Activate **Highlight Suggestions from List Tab**.
   This highlights the suggestions from the **List** tab of the **Chord Assistant** in the chord list.
4. Click one of the chords in the list to audition the chord, and assign it to the chord event.

RESULT

The chord is assigned to the chord event on the chord track.

AFTER COMPLETING THIS TASK

You can change the position of the chord events manually or by using the **Quantize** function on the **Edit** menu.

RELATED LINKS
Auditioning Chord Events on page 931
Chord Assistant – Detected on page 930
List Assistant on page 926

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 on the chord track as chord events.

NOTE

The chord track uses its own voicing settings. The recorded chord events may therefore sound different.

RELATED LINKS

Adding Chord Events on page 923

Using 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 real time via a MIDI keyboard.
- Record your performances as MIDI events on a MIDI or instrument track or even on the chord track.

NOTE

We recommend that you connect and set up a MIDI keyboard to use the chord pads.

RELATED LINKS

Chord Pads Zone on page 947
Chord Pads Zone Toolbar on page 948
Chord Pads on page 953
Chord Pads Zone Keyboard on page 956

Chord Pads Zone

The chord pads zone in the lower zone of the **Project** window offers all the functions that you need to work with chord pads.

To open the chord pads zone, select **Project** > **Show/Hide Chord Pads**.

The chord pads zone features the following sections:

1 **Chord Pads Zone Toolbar**

Contains tools and settings for the chord pads zone.

2 **Chord Pads Zone Extended Toolbar**

Contains tools and settings for the individual chord pads and the assigned chords.

3 **Chord Pads**

Each chord pad can have a chord assigned to it that is played back when you trigger the chord pad, either by clicking it or by playing the corresponding key on your MIDI keyboard.

4 **Chord Pads Zone Keyboard**

Shows which keys are played when you trigger a chord pad with the mouse or the MIDI keyboard. It also highlights the trigger key when you hover the mouse over an assigned pad.

5 **Integrated Editor/Assistant**

Allows you to open the chord **Editor** or the **Assistant** in the right zone of the chord pads zone.

RELATED LINKS
Chord Pads Zone Toolbar on page 948
Chord Pads Zone Extended Toolbar on page 951
Chord Pads on page 953
Chord Pads Zone Keyboard on page 956
Chord Pad Playback and Recording on page 967
Players and Voicings on page 977
Opening Chord Pads on page 64
Selected Mode Settings—Sections on page 982
Chord Editor on page 924
Circle of Fifths Assistant on page 976
List Assistant on page 974

Chord Pads Zone Toolbar

The chord pads zone toolbar contains tools and settings for the chord pads.

- To show or hide the toolbar elements, right-click the toolbar, and activate or deactivate the elements.

Output Mode

Chord Pad Output Mode

Activate this to send chord data to all tracks that are monitored or record-enabled. Deactivate this to send chord data exclusively to tracks that are monitored or record-enabled and where **Input Routing** is set to **Chord Pads**.

NOTE

If **Record-Enable allows MIDI Thru** is deactivated in the **Preferences** dialog (**Record—MIDI** page), you must activate **Monitor** to use the chord pads.

Step Input

Step Input

Activates/Deactivates step input.

Move Insert Mode

Moves all chord events to the right of the step input cursor to make room for the inserted event when you insert chord events.

NOTE

This only works with **Step Input** activated.

Root Key

Root Key

Opens the **Root Key** pane, which allows you to change the root key. If you activate **Transpose Pads**, all chord pads are transposed to the set root key. The **Enh. Shift** pop-up menu allows you to change the enharmonic spelling of notes.

Chord Pads Presets

Open Chord Pads Preset Browser

Allows you to select a preset for chord pads and players.

Load Preset Settings

Opens a pane with preset settings.

- **Load Chords & Players**
  Loads the chords and the players of **Chord Pads Presets**.
- **Load Chords Only**
  Loads only the chords of **Chord Pads Presets**.
- **Load Players Only**
  Loads only the players of **Chord Pads Presets**.

Previous Preset

Loads the previous chord pads preset.

Next Preset

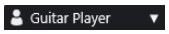
Loads the next chord pads preset.

Save Preset

Allows you to save presets for chord pads and players.

Player Settings

Player Settings



Shows the selected player and opens the **Player Settings** pane, where you can select another player and a voicing style.

Player Mode Settings

Player Mode

Shows the selected player mode and opens a pop-up menu, where you can select another player mode.

NOTE

You can drop a MIDI part from the event display on the **Player Mode** section. This automatically sets the player mode to **Pattern** and uses this MIDI part as a pattern.

Chord Assistant Window

Show/Hide Chord Assistant Window

Shows/Hides the **Chord Assistant** window that features the **List**, the **Proximity**, and the **Circle of Fifths** assistants.

Assign from Chord Track

Assign from Chord Track

Assigns the chord events from the chord track to the chord pads in the same order as they are shown on the chord track. Chord events that have more than one occurrence are only assigned once. If there are not enough chord events to fill the chord pads, some pads stay unassigned.

Snap Playback to Musical Grid

Snap Playback to Musical Grid

Allows you to snap the playback of a triggered chord pad to the next defined musical position. This is useful if you work with an arpeggiator or if you set the **Player Modes** to **Pattern**.

Velocity on Mouse Click

Velocity

Allows you to determine the velocity value that is used when you trigger chord pads with the mouse.

NOTE

You can set up the velocity range in the **Preferences** dialog (**Editing**—**MIDI** page).

Chord Pads Remote Settings

Chord Pads Remote Settings

Opens the **Chord Pads Remote Settings** dialog, which allows you to change the remote key assignments and the layout of the chord pads.

Chord Assistant Window

Show/Hide Editor/Assistant

Shows/hides the **Editor**/**Assistant** in the chord pads zone.

Chord Pads Display Settings

Pad Display Settings

Opens the **Chord Pad Display Settings** pane, which allows you to change the chord symbols and the pad layout.

RELATED LINKS
Chord Assistant on page 973
Chord Pads Presets on page 972
Player Settings on page 977
Player Mode Settings on page 979
Chord Pads Display Settings Pane on page 991
Chord Pads Remote Settings Dialog on page 986
Inserting Note Events via Step Input on page 843

Chord Pads Zone Extended Toolbar

The extended toolbar contains additional tools and settings for the individual chord pads and the assigned chords.

- To show/hide the extended toolbar elements, right-click the extended toolbar, and activate or deactivate the elements.

NOTE

The assignment functions and the modifiers apply to all chord pads that are selected.

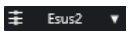
Select All

Select All

Selects all chord pads.

Assignment Functions

Open Chord Editor



Opens the chord **Editor**.

Assign from MIDI Input

Allows you to assign chords via MIDI input, that is, by pressing keys on your MIDI keyboard.

Remove Assignment

Removes the assigned chord from the chord pad.

Pad Modifiers

Transpose Down

Plays back the chord assigned to the first selected pad and transposes all selected and assigned chord pads downwards.

NOTE

You can also move the mouse pointer over a chord pad, press **Shift** and move the mouse wheel down to transpose the assigned chord downwards.

Transpose Up

Plays back the chord assigned to the first selected pad and transposes all selected and assigned pads upwards.

NOTE

You can also move the mouse pointer over a chord pad, press **Shift** and move the mouse wheel up to transpose the assigned chord upwards.

Fewer Tensions

Plays back the chord assigned to the first selected pad and reduces tensions of all selected and assigned pads.

NOTE

You can also move the mouse pointer over a chord pad, press **Alt** and move the mouse wheel down to reduce tensions of the assigned chord.

More Tensions

Plays back the chord assigned to the first selected pad and adds tensions to all selected and assigned pads.

NOTE

You can also move the mouse pointer over a chord pad, press **Alt** and move the mouse wheel up to add tensions to the assigned chord.

Previous Voicing

Plays back the chord assigned to the first selected pad and switches all selected and assigned pads to the previous voicing.

NOTE

You can also move the mouse pointer over a chord pad and move the mouse wheel up to switch to the previous voicing of the assigned chord.

Next Voicing

Plays back the chord assigned to the first selected pad and switches all selected and assigned pads to the next voicing.

NOTE

You can also move the mouse pointer over a chord pad and move the mouse wheel down to switch to the next voicing of the assigned chord.

Pad State Modifiers

Lock

Locks the assigned chord on the chord pad.

NOTE

Alternatively, you can select chord pads and press **Ctrl/Cmd** - **Shift** - **L** to lock the assigned chords on the chord pads.

Adaptive Voicing

Activates adaptive voicing for a chord pad. If you change the voicing for a pad manually, adaptive voicing is deactivated.

Adaptive Voicing Reference

Sets the selected pad as an adaptive voicing reference. If set, the automatic voicings for the subsequent pads are set in a way that they do not get too far away from the reference voicing. Only one pad can be set as an adaptive voicing reference.

RELATED LINKS
Assigning Chords with the Chord Editor on page 958
Assigning Chords with the MIDI Keyboard on page 961
Adaptive Voicing on page 977
Removing Chord Assignments on page 963

Chord Pads

You can assign a chord to each chord pad. The chords are played back when you trigger the chord pads. Chord pads display the assigned chord, the used voicing and information about the status of the pad.

Chord Information

Chord Symbol

The symbol of the chord that is assigned to the chord pad is shown in the center of the chord pad. Each chord pad can contain one chord. By default, the chord symbol is displayed as a note name. To specify how the chord symbol is shown, change the settings in the **Chord Symbols** section of the **Chord Pads Display Settings** pane.

NOTE

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.

Voicing Indicator

The voicing that is used for the chord is indicated at the bottom of the chord pad. Voicing indicators are only displayed if the zoom level for the chord pads is high enough.

Adaptive Voicing Indicator

The adaptive voicing indicator is shown in the top right corner of the chord pads. This is activated by default. If you manually change the voicing for a pad, adaptive voicing is deactivated. You can activate it by enabling the **Adaptive Voicing** button on the extended toolbar.

Adaptive Voicing Reference Indicator

The adaptive voicing reference indicator is shown in the top right corner of the chord pads. The chord pad frame is shown in yellow. If a chord pad is set as an adaptive voicing reference, the automatic voicings for the subsequent pads are set in a way that they do not get too far away from the reference voicing. Only one pad can be set as an adaptive voicing reference.

List Assistant Color Indicator

The color indicator from the **List** assistant is shown at the bottom of the chord pad, if you activate **Show List Assistant Colors** on the **Chord Pads Display Settings** pane. Chord pads that hold chords that match **List** assistant suggestions are colored according to their musical usefulness. Green indicates that this suggestion is more

common, orange or red are musically more adventurous or do not fit at all. The reference for the suggestions is the chord that is assigned to the first selected pad.

Status Information

Locked Chord Pad

A padlock icon in the upper right corner of a chord pad indicates that the chord is locked to the chord pad.

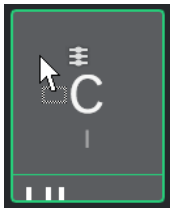
Selected Chord Pad

A white frame indicates that the chord pad is selected.

Triggered Chord Pad

A highlighted background indicates that the chord pad is triggered.

Drop Location

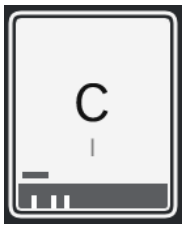


If you drop a chord from the chord **Editor** or one of the assistants to the chord pad, its frame is temporarily highlighted in green.

MIDI Input Destination

If you select a chord pad and activate **Assign from MIDI Input**, its frame is temporarily highlighted in red to indicate that the MIDI input is routed to this chord pad.

Pattern Playback Progress



If you activate **Pattern** as a **Player Mode** and enable **Show Pattern Play Progress** in the **Chord Pads Display Settings** pane, the progress of the pattern playback is indicated by a progress bar at the bottom of the chord pad.

NOTE

- By default, the chord pads are shown in keyboard layout. To change the display, use the settings on the **Chord Pads Display Settings** pane.
- If the chord pads zone has the focus, the default key commands apply to the chord pads.

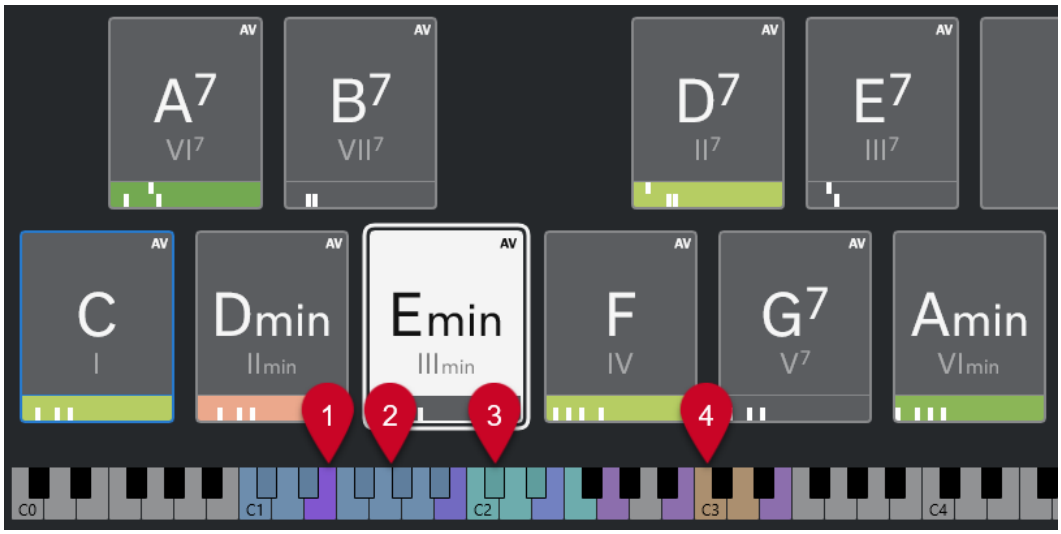
RELATED LINKS
Chord Editor on page 924
Chord Assistant on page 973
List Assistant on page 974
Show List Assistant Colors on page 992
Selected Mode Settings—Pattern on page 980
Chord Symbols on page 991
Adaptive Voicing on page 977
Chord Pads Display Settings Pane on page 991

Chord Pads Zone Keyboard

The chord pads zone keyboard shows how a chord that is assigned to a chord pad is played back when you trigger the chord pad with the mouse or a MIDI keyboard.

NOTE

You can zoom the keyboard by clicking and dragging up or down. You can scroll the keyboard by clicking and dragging to the left or to the right.



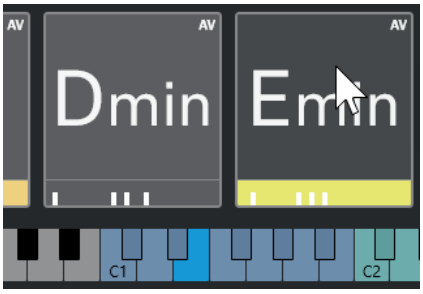
1 **Played Notes**

When you trigger a chord pad with the mouse or a MIDI keyboard, the notes of the assigned chord are highlighted.

2 **Chord Pad Triggers (Pad Remote Control)**

The range of keys that trigger the chord pads is highlighted in blue. On the **Pad Remote Control** page of the **Chord Pads Remote Settings** dialog, you can define the range by setting the values for **Pads Remote Range Start** and **Pads Remote Range End** in the **Chord Pad Triggers** section.

When you hover the mouse over an assigned pad, its trigger key is highlighted on the chord pads zone keyboard.



3 **Chord Modifiers for Voicing, Tension, and Transpose (Pad Remote Control)**

The keys that change the voicing, tensions, and transpose settings of the chord pads are highlighted in green.

NOTE

The chord modifier keys are only highlighted and active on the keyboard with the **Activate** option enabled in the **Chord Modifiers** section on the **Pad Remote Control** page of the **Chord Pads Remote Settings** dialog.

4 **Sections (Pad Remote Control)**

The keys that trigger the sections are highlighted in brown.

NOTE

The section remote range is only shown if **Player Modes** is set to **Sections**.

RELATED LINKS
Chord Pads on page 953
Player Mode Settings on page 979
Pad Remote Control Tab on page 987
Chord Pads Remote Settings Dialog on page 986
Selected Mode Settings—Sections on page 982

Chord Assignment

You can use the default chord assignments, but you can also assign your own chords to the chord pads.

To assign chords to chord pads, you can use:

- The chord **Editor**
- The **List** assistant
- The **Proximity** assistant

- The **Circle of Fifths** assistant
- **Chord Pads Presets**
- Your MIDI keyboard
- Chord events from the chord track

RELATED LINKS
Assigning Chords with the Chord Editor on page 958
Assigning Chords with the Proximity Assistant on page 959
Assigning Chords with the Circle of Fifths Assistant on page 960
List Assistant on page 974
Chord Pads Presets on page 972
Assigning Chords with the MIDI Keyboard on page 961
Assigning Chords from the Chord Track on page 962

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. Select the chord pad to which you want to assign a chord.
2. Do one of the following to open the **Chord Editor**:
   - Double-click the chord pad.
   - Press **Return**.
   - On the chord pads zone toolbar, activate **Show/Hide Editor/Assistant** to show the **Editor/Assistant** in the chord pads zone, and select chord **Editor**.
   - On the chord pads zone extended toolbar, click **Open Chord Editor**.
3. In the chord **Editor**, use the chord definition buttons to define a root note, a chord type, a tension, and a bass note.

RESULT

The selected chord is automatically assigned to the chord pad, and the sound is triggered to give you acoustic feedback.

RELATED LINKS
Chord Editor on page 924

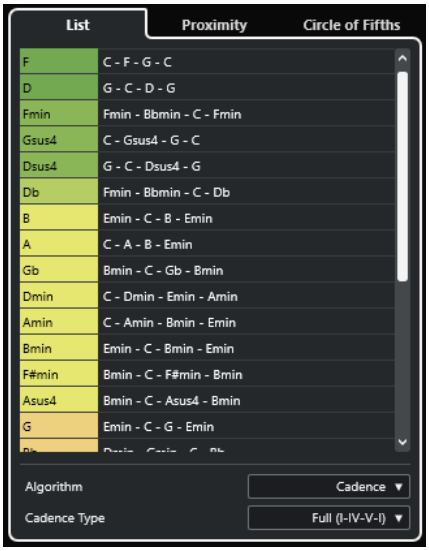
Assigning Chords with the List Assistant

If you have a chord that you want to use as a starting point for finding follow-on chords, you can use the **List** assistant.

PROCEDURE

1. On the toolbar, activate **Show/Hide Chord Assistant Window**.
2. Open the **List** assistant.
3. Select the chord pad that has the chord assigned that you want to use as a reference for suggestions.

The further away the chord is from the reference chord, the more complex the suggestion becomes.



4. Optional: In the list, click the chord symbols to audition the corresponding chords.
5. To assign a chord to a chord pad, drag it out of the **List** assistant, and drop it on a chord pad.

   If one of the chord pads is unassigned, you can also double-click the chord in the **List** assistant to assign it to the first unassigned pad.

RESULT

The chord is assigned to the chord pad. It is played back to give you acoustic feedback.

RELATED LINKS

List Assistant on page 974
Chord Pads on page 953

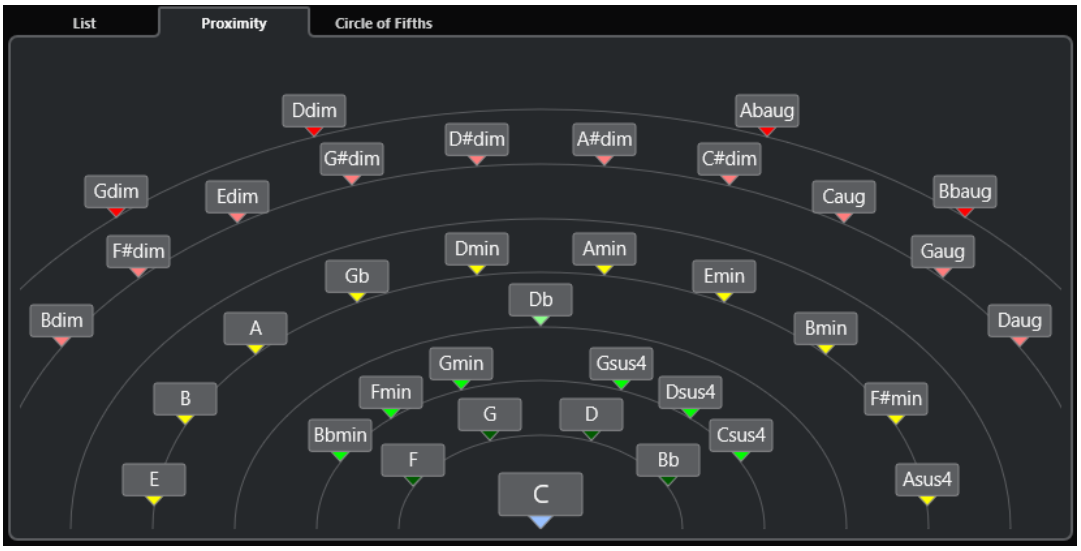
Assigning Chords with the Proximity Assistant

If you have a chord that you want to use as a starting point for finding follow-on chords, you can use the **Proximity** assistant.

PROCEDURE

1. On the toolbar, activate **Show/Hide Chord Assistant Window**.
2. Open the **Proximity** assistant.
3. Select the chord pad that has the chord assigned that you want to use as a reference for suggestions.

   The reference chord is shown at the bottom, in the center of the **Proximity** assistant. The further away the chord is from the reference chord, the more complex the suggestion becomes.



4. Optional: In the **Proximity** assistant, click the chord symbols to audition the corresponding chords.
5. To assign a chord to a chord pad, drag it out of the **Proximity** assistant, and drop it on a chord pad.

   NOTE

   If one of the chord pads is unassigned, you can also double-click the chord in the **Chord Assistant** window to assign it to the first unassigned pad.

RESULT

The chord is assigned to the chord pad. It is played back to give you acoustic feedback.

RELATED LINKS

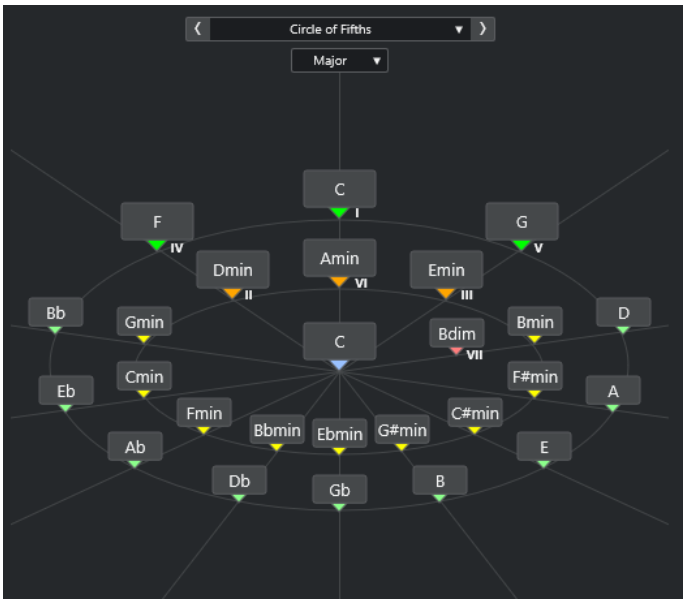
Proximity Assistant on page 975
Chord Pads on page 953

Assigning Chords with the Circle of Fifths Assistant

You can use the **Circle of Fifths** assistant to assign chords.

PROCEDURE

1. Open the **Circle of Fifths** assistant.



The root key is displayed in the center, and the chords that belong to the same scale are shown above it. The numerals indicate the scale degree of the chords. These help you to create chord progressions.

2. Optional: In the **Circle of Fifths** assistant, click the chord symbols to trigger the corresponding chords.
3. To assign a chord, drag it out of the **Circle of Fifths** assistant, and drop it on the chord pad.

NOTE

If one of the chord pads is unassigned, you can also right-click the chord in the **Circle of Fifths** assistant and select **Assign to First Unassigned Pad** to assign the chord to the first unassigned pad.

RELATED LINKS
Circle of Fifths Assistant on page 976
Chord Assignment on page 957
Root Key Pane on page 964

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 or the **On-Screen Keyboard**.

PREREQUISITE

You have selected a MIDI track or an instrument track.

PROCEDURE

1. Select one ore more chord pads to which you want to assign new chords.
2. On the extended toolbar, activate **Assign from MIDI Input**.
   The chord pad frame is highlighted in red to indicate that it is enabled for MIDI Input.
3. On your MIDI keyboard or on the **On-Screen Keyboard**, press the keys that make up the chord that you want to assign.

The chord and the voicing are assigned to the chord pad, and you obtain an acoustic feedback of the chord.

NOTE

The assigned voicing can be changed by setting the **Adaptive Voicing** parameter. If you want to prevent changes to the voicing for a specific chord pad, right-click the chord pad, and on the chord pads zone toolbar, click **Lock**.

4. Repeat the steps above to assign chords to the other chord pads.

RELATED LINKS
Chord Assignment on page 957
Adaptive Voicing on page 977
Chord Pads Zone Extended Toolbar on page 951

Assigning Chords from the Chord Track

You can assign chord events from the chord track to the chord pads.

PREREQUISITE

You have added a chord track with chord events to your project.

PROCEDURE

- On the chord pads zone toolbar, click **Assign from Chord Track**.

  If chords are already assigned to the chord pads, a warning message informs you that all previous assignments are overwritten.

RESULT

The chord events are assigned to the chord pads in the same order as on the chord track.

NOTE

Chord events that have more than one occurrence on the chord track are only assigned once.

RELATED LINKS
Adding the Chord Track on page 922
Adding Chord Events on page 923

Swapping Chord Assignments

You can swap the chord assignments of two pads.

PROCEDURE

- Click a chord pad, and drag it to another chord pad.

  While you drag, the frame of the destination chord pad is highlighted in green.

RESULT

When you drop the chord pad on another chord pad, the chord assignments are swapped, together with their settings. An exception to this is the **Adaptive Voicing Reference** setting, which remains on the chord pad to which it was originally applied.

RELATED LINKS
Chord Pads on page 953

Copying Chord Assignments

You can copy the chord assignment of one chord pad and paste it to another chord pad.

PROCEDURE

- **Alt/Opt**-click a chord pad, and drag it to another chord pad.
  While you drag, the frame of the destination chord pad is highlighted in green.

RESULT

When you drop the pad on another one, the assignment of the first pad is copied to the destination chord pad, including its settings. An exception to this is the **Adaptive Voicing Reference** setting, which remains on the chord pad to which it was originally applied.

RELATED LINKS
Chord Pads on page 953

Removing Chord Assignments

You can remove chord assignments from chord pads to start from scratch. This operation cannot be undone.

PROCEDURE

1. Select the chord pads whose chord assignments you want to remove.
   - NOTE

     To select all chord pads, press **Ctrl/Cmd**-**A**, or activate **Select All** on the extended toolbar.
2. Do one of the following to remove the assignments:
   - Press **Backspace**.
   - Press **Delete**.
   - On the extended toolbar, click **Remove Assignment**.
3. In the warning message, click **OK**.

RESULT

The assignments are removed from the selected chord pads.

RELATED LINKS
Chord Pads Zone Extended Toolbar on page 951

Root Key

You can set up the root key of the chord pads.

By default the root key is set to C. You can set up a different root key in the **Root Key** pane. When you load a preset, the root key is set automatically.

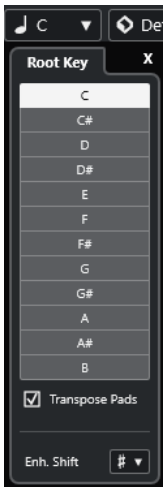
The root key is displayed on the following interface items:

- The **Root Key** field on the chord pads zone toolbar.
- The chord symbol on chord pad that is situated in the lower left corner of the chord pads zone.
- The chord symbol that is displayed in the center of the **Circle of Fifths** assistant.

RELATED LINKS
Chord Pads Zone Toolbar on page 948
Assigning Chords with the Circle of Fifths Assistant on page 960
Chord Pads Presets on page 972

Root Key Pane

The **Root Key** pane allows you to change the root key for chord pads. It also allows you to transpose chord pads and to change the enharmonic spelling of the assigned chords.

- To open the **Root Key** pane, click **Root Key** in the chord pads zone toolbar.

The following options are available:

Pitch fields

Allow you to select a pitch.

- If **Transpose Pads** is activated, the selected pitch determines how the chord pads are transposed.
- If **Transpose Pads** is deactivated, the selected pitch sets the root key for the chord pads.

Transpose Pads

Allows you to transpose all chord pads to the selected pitch. If you deactivate this and select another pitch via the pitch fields, the root key for the chord pads is set.

Enh. Shift

Allows you to change the enharmonic spelling of notes.

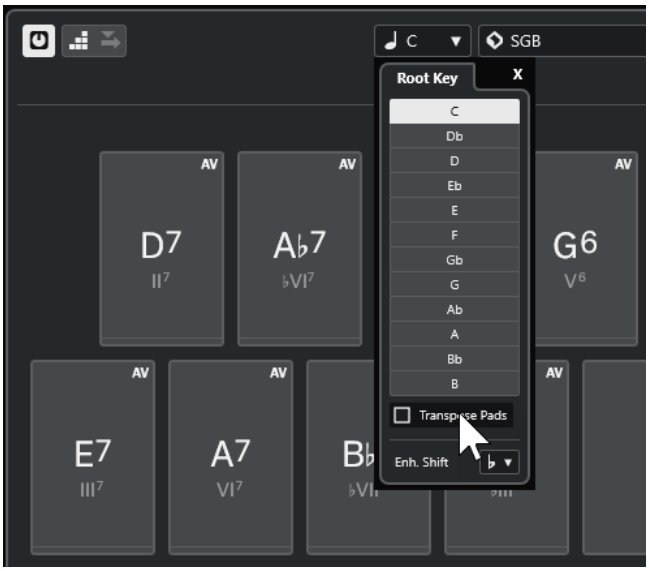
RELATED LINKS
Chord Pads Zone Toolbar on page 948
Changing the Root Key without Transposing on page 965
Transposing Chord Pads on page 966

Changing the Root Key without Transposing

You can change the root key of the chord pads. This is useful if the harmonic functions of the individual chord pads are not indicated correctly. This can happen when you assign the chord pads manually and your root key differs from the default key of C.

PROCEDURE

1. Click **Root Key** on the toolbar.
2. In the **Root Key** pane, deactivate **Transpose Pads**.



3. Click a pitch field to select the correct root key.

NOTE

You can also set the root key by moving the mouse pointer over the **Root Key** field and using the mouse wheel.

RESULT

The root key and the harmonic functions are changed while the chords assigned to the chord pads stay the same. The assigned chords are not transposed.

RELATED LINKS

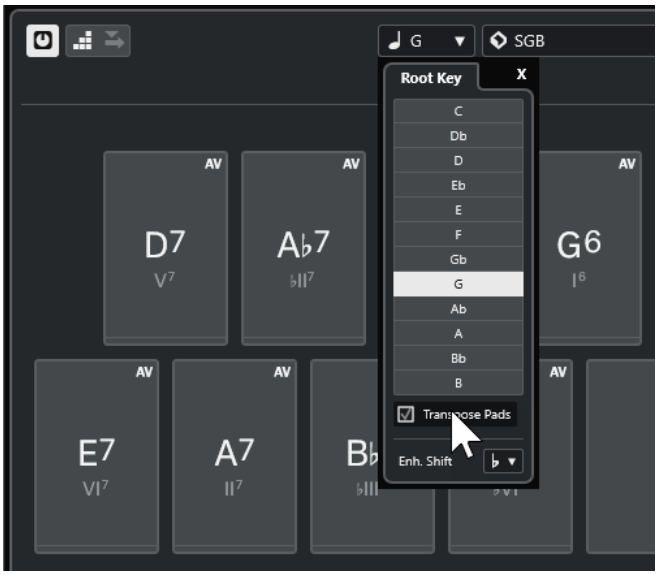
Root Key Pane on page 964
Transposing Chord Pads on page 966

Transposing Chord Pads

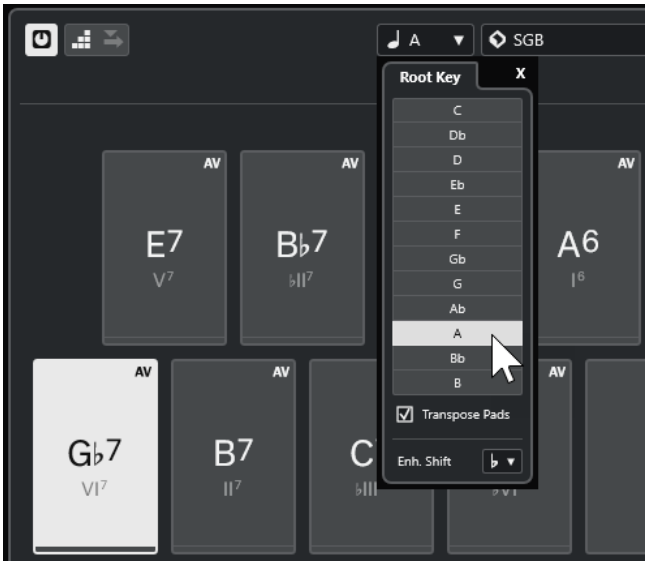
You can transpose all chord pads without changing their root key. Do this, if you want to transpose all assigned chord pads to a higher or lower pitch.

PROCEDURE

1. Click **Root Key** on the toolbar.
2. On the **Root Key** pane, activate **Transpose Pads**.



3. Click a pitch field to select another pitch.



RESULT

The chords assigned to the chord pads are changed while the root key stays the same. The assigned chords are transposed.

NOTE

You can also transpose all chord pads by clicking **Select All** on the extended toolbar, and clicking **Transpose Up** or **Transpose Down** or by pressing **Shift** and using the mouse wheel or by using the corresponding key commands.

RELATED LINKS

Chord Pads Zone Toolbar on page 948
Changing the Root Key without Transposing on page 965
Root Key Pane on page 964

Chord Pad Playback and Recording

You can play back and record chords that are assigned to chord pads using MIDI or instrument tracks.

There are two different **Chord Pad Output Modes** that determine if chords that are assigned to chord pads can be played back and recorded using any MIDI track or using exclusive instrument or MIDI tracks:

- **Chord Pad Output Mode: On**

  Allows you to play back and record chord pads on any MIDI or instrument track, as long as **Record Enable** or **Monitor** is activated.
- **Chord Pad Output Mode: Off**

  Allows you to play back and record chord pads using exclusive MIDI or instrument tracks, as long as **Record Enable** or **Monitor** is activated, and with **Chord Pads** selected as a MIDI input in the **Input Routing** pop-up menu.

NOTE

If **Record-Enable allows MIDI Thru** is deactivated in the **Preferences** dialog (**Record**—**MIDI** page), you must activate **Monitor** to use the chord pads.

RELATED LINKS

Chord Pads Zone on page 947
Recording Chords on the Chord Track on page 970
Recording Chords on Instrument Tracks on page 969
Playing Back Chord Pads Using Any Instrument Track on page 967
Playing Back Chord Pads Using Exclusive Instrument Tracks on page 968

Playing Back Chord Pads Using Any Instrument Track

You can play back chord pads on any instrument or MIDI track, as long as **Record Enable** or **Monitor** is activated.

PREREQUISITE

You have connected and set up a MIDI keyboard.

PROCEDURE

1. In the global track controls area of the track list, click **Add Track**.
2. Click **Instrument**.
3. Open the **Instrument** pop-up menu, and select a VST instrument.
4. Click **Add Track**.
   The instrument track is added to the track list, and the control panel of the selected VST instrument is opened.
5. On the instrument track, click **Record Enable** or **Monitor**.

   NOTE

   If **Record-Enable allows MIDI Thru** is deactivated in the **Preferences** dialog (**Record—MIDI** page), you must activate **Monitor** to use the chord pads.
6. On the chord pads toolbar, activate **Chord Pad Output Mode**.
7. Press some keys on your MIDI keyboard or click the chord pads to trigger the assigned chords.

RELATED LINKS
Add Track Dialog – Instrument on page 112
Chord Pads Remote Settings Dialog on page 986
Changing the Pads Remote Range on page 989

Playing Back Chord Pads Using Exclusive Instrument Tracks

You can play back chord pads using exclusive instrument or MIDI tracks where **Record Enable** or **Monitor** is activated, and where **Chord Pads** is selected as a MIDI input in the **Input Routing** pop-up menu.

PREREQUISITE

You have set up a MIDI keyboard.

PROCEDURE

1. In the global track controls area of the track list, click **Add Track**.
2. Click **Instrument**.
3. Open the **Instrument** pop-up menu, and select a VST instrument.
4. Click **Add Track**.
   The instrument track is added to the track list, and the control panel of the selected VST instrument is opened.
5. On the instrument track, click **Record Enable** or **Monitor**.

   NOTE

   If **Record-Enable allows MIDI Thru** is deactivated in the **Preferences** dialog (**Record—MIDI** page), you must activate **Monitor** to use the chord pads.
6. In the **Inspector** for the instrument track, open the **Input Routing** pop-up menu, and select **Chord Pads**.
7. On the chord pads toolbar, deactivate **Chord Pad Output Mode**.

8. Press some keys on your MIDI keyboard or click the chord pads to trigger the assigned chords.

RESULT

The instrument track now receives MIDI data exclusively from the chord pads. You can use a connected MIDI keyboard to trigger the chord pads. This still works if you hide the **Chord Pads** from view.

NOTE

Via the **Pad Remote Control** tab of the **Chord Pads Remote Settings** dialog, you can select your connected MIDI keyboard from the **MIDI Input** pop-up menu. This is useful if you want to use a specific MIDI keyboard exclusively for triggering the chord pads.

RELATED LINKS

Pad Remote Control Tab on page 987

Recording Chords on Instrument Tracks

You can record chords that are triggered by chord pads on MIDI or instrument tracks.

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, click **Record Enable** or **Monitor**.

   NOTE

   If **Record-Enable allows MIDI Thru** is deactivated in the **Preferences** dialog (**Record—MIDI** page), you must activate **Monitor** to use the chord pads.

2. On the **Transport** panel, activate **Record**.
3. On your MIDI keyboard, press the keys that trigger the chord pads.

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

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.

RELATED LINKS

Dissolve Part Dialog on page 770
Dissolving Parts into Separate Channels on page 770
Dissolving Parts into Separate Pitches on page 771

Recording Chords on the Chord Track

You can record chords that are triggered by chord pads 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, click **Record Enable** or **Monitor**.

   NOTE

   If **Record-Enable allows MIDI Thru** is deactivated in the **Preferences** dialog (**Record—MIDI** page), you must activate **Monitor** to use the chord pads.

2. Select **Project** > **Add Track** > **Chord**.

   The chord track is added to the track list.

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.

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 Track on page 128
Chord Functions on page 922
Voicings on page 935

Inserting Chord Events via Step Input

You can insert chords from chord pads as chord events on the chord track. Chord events are inserted at the start of a bar.

PREREQUISITE

You have assigned chords to the chord pads, and you have added a chord track to your project.

PROCEDURE

1. In the **Step Input** section of the chord pads zone toolbar, activate **Step Input**.
2. Trigger a chord pad in the chord pads zone to insert a chord event.

   The step input cursor is displayed with blue a handle in the ruler, and a vertical line in the note display. The chord event is inserted, and the step input cursor automatically jumps to the start of the next bar.

NOTE

You can use the **Right Arrow**/**Left Arrow** to set the step input cursor to the position where you want to insert the chord event.

If you activate **Move Insert Mode**, all chord events to the right of the step input cursor are moved to make room for the inserted event.

3. Repeat the steps above to insert further chord events.
4. When you are done, click **Step Input** again to deactivate it.

RESULT

The chord events are inserted on the chord track.

RELATED LINKS

Step Input on page 948
Move Insert Mode on page 948
Chord Events on page 923
Adding Chord Events on page 923

Creating Chord Events from Chord Pads

You can use the chords assigned to the chord pads to create chord events in the **Project** window.

PROCEDURE

- Click a chord pad, and drag it onto the chord track.

RESULT

A chord event is created.

RELATED LINKS

Chord Events on page 923
Adding Chord Events on page 923

Creating MIDI Parts from Chord Pads

You can use the chords assigned to the chord pads to create MIDI parts in the **Project** window.

PROCEDURE

- Click a chord pad, and drag it onto a MIDI or instrument track.

RESULT

A MIDI part is created. It contains the MIDI events that make up the chord and has a length of one bar.

Chord Pads Presets

Chord Pads Presets are templates that can be applied to newly created or existing chord pads.

Chord Pads Presets store the chords that are assigned to the chord pads, as well as the player configurations, including any pattern data.

NOTE

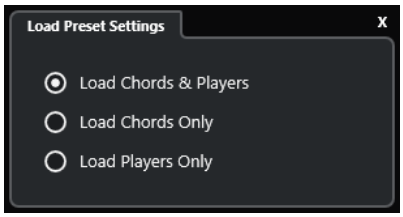
Chord Pads Presets are organized in the **MediaBay**, where you can categorize them via attributes.

RELATED LINKS
Saving Chord Pads Presets on page 972
Load Preset Settings Pane on page 972

Load Preset Settings Pane

The **Load Preset Settings** pane allows you to define precisely what to include when you load a preset.

- To open the **Load Preset Settings** pane, click **Load Preset Settings** on the chord pads toolbar.



The following options are available:

Load Chords & Players

Loads the chords and the players of the **Chord Pads Presets**.

Load Chords Only

Loads only the chords of the **Chord Pads Presets**. This is useful if you want to use specific chords that you have saved as a preset, but you do not want to alter your current player setting.

Load Players Only

Loads only the player configurations of the **Chord Pads Presets**. This is useful if you have saved very complex player settings and you want to reuse them on other chord pads without changing the assigned chords.

RELATED LINKS
Chord Pads Presets on page 972
Saving Chord Pads Presets on page 972

Saving Chord Pads Presets

If you have set up chord pads, you can save them as **Chord Pads Presets**.

PROCEDURE

1. On the chord pads toolbar, click **Save 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 close the dialog.

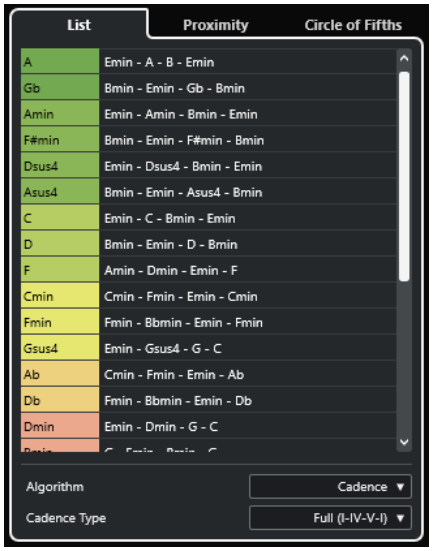
RELATED LINKS
Chord Pads Presets on page 972
Load Preset Settings Pane on page 972

Chord Assistant

The **Chord Assistant** assists you in finding chords to create a chord progression for your song.

To open the **Chord Assistant**, do one of the following:

- Activate **Show/Hide Chord Assistant Window** on the chord pads zone toolbar.
- Activate **Show/Hide Editor/Assistant** on the chord pads zone toolbar.



The **Chord Assistant** features the following tabs:

- **List**

  Allows you to find suggestions for the chord that is assigned to the selected chord pad.
- **Circle of Fifths**

  Allows you to find suggestions for the chord that is assigned as **Root Key**.
- **Proximity**

  Allows you to find suggestions for the chord that is assigned to the selected chord pad.

  NOTE

  The **Proximity** assistant is not available in the right zone of the chord pads zone.

RELATED LINKS
List Assistant on page 974
Circle of Fifths Assistant on page 976

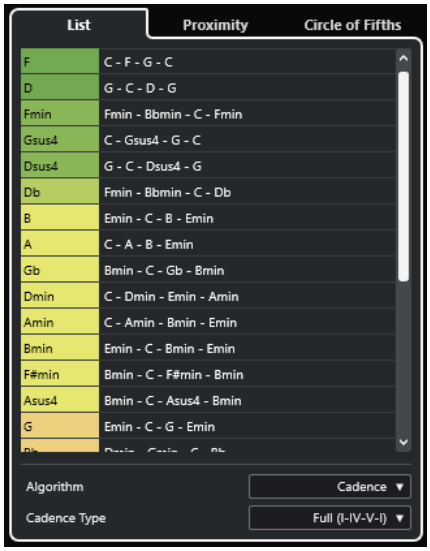
Proximity Assistant on page 975
Root Key Pane on page 964

List Assistant

The **List** assistant allows you to create chord progressions based on harmonic rules that can be simple or complex.

To open the **List** assistant, do one of the following:

- Activate **Show/Hide Chord Assistant Window** on the chord pads zone toolbar, and select **List**.
- Activate **Show/Hide Editor/Assistant** on the chord pads zone toolbar, and select **List**.



Suggestions list

Displays suggestions for the next chord.

- Click a chord suggestion to audition it.
- Drag a suggestion to a chord pad to assign the chord to the chord pad.
- Double-click a chord suggestion to assign the chord to the first free chord pad.

NOTE

The suggestions are colored according to their musical usefulness. Green indicates that this suggestion is more common, orange or red are musically more adventurous or do not fit at all.

Algorithm

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 you want the chords to share. The suggested chords and the colors change accordingly.

Cadence Type

Allows you to select a cadence type for the suggestions. As a result, only the chords with specific harmonic functions are suggested. The suggested chords and the colors change accordingly.

NOTE

These options are only available if you select **Cadence** as the **Algorithm**.

RELATED LINKS
Chord Assistant on page 973
Circle of Fifths Assistant on page 976
Proximity Assistant on page 975

Proximity Assistant

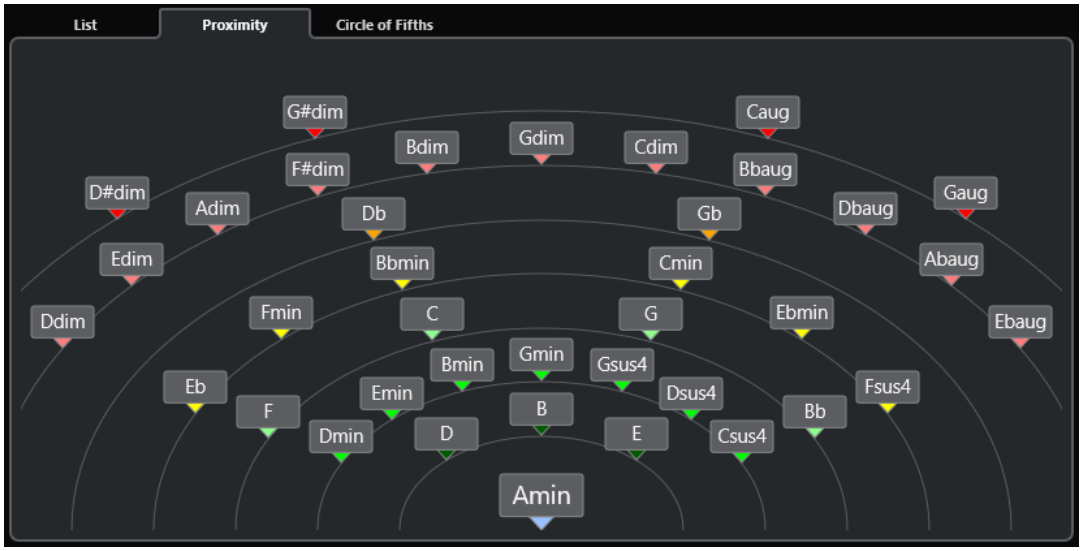
The **Proximity** assistant uses a set of harmonic rules, in order to offer you suggestions that match the reference chord.

The reference chord is displayed at the bottom, in the center of the **Chord Assistant** window. The further away a chord suggestion is situated from this chord, the more complex the suggestion.

NOTE

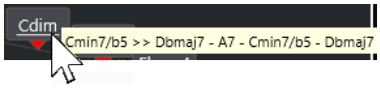
The **Proximity** assistant is not available in the right zone of the chord pads zone.

- To open the **Proximity** assistant, activate **Show/Hide Chord Assistant Window** on the chord pads zone toolbar, and select **Proximity**.



- To audition a suggested chord, click it.
  The last 3 suggested chords that you clicked are shown in bold.
- To assign a suggestion to the first unassigned chord pad, double-click the suggested chord.
  You can also drag the suggested chord and drop it on a chord pad.

Chords that cannot be fully displayed are underlined. The entire chord is shown in the tooltip.



RELATED LINKS
Chord Assistant on page 973

Assigning Chords with the Proximity Assistant on page 959
List Assistant on page 974
Circle of Fifths Assistant on page 976

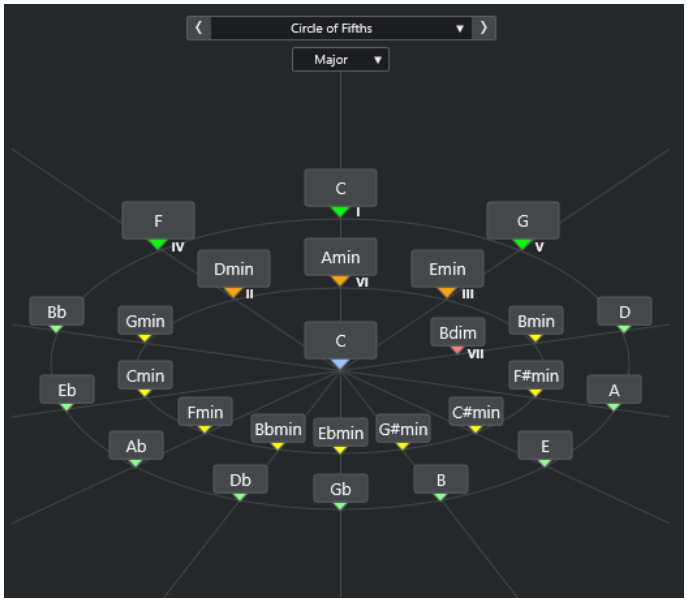
Circle of Fifths Assistant

The **Circle of Fifths** assistant displays the chords in an interactive visualization.

- The chord that defines the current key, which is shown at the top, in the center of the **Circle of Fifths**, is marked as the tonic (I).
- 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, or you can use the other chords for more creative results.

To open the **Circle of Fifths** assistant, do one of the following:

- Activate **Show/Hide Chord Assistant Window** on the chord pads zone toolbar, and select **Circle of Fifths**.
- Activate **Show/Hide Editor/Assistant** on the chord pads zone toolbar, and select **Circle of Fifths**.



- To play a chord, click it.

  The last 3 chords that you clicked are shown in bold.
- To assign a chord to the next unassigned chord pad, right-click the suggested chord, and select **Assign to First Unassigned Pad**, or double-click the suggested chord.

  You can also drag the suggested chord and drop it on a chord pad.
- To correctly display the scale degrees, open the **Major**/**Minor** pop-up menu and select an option.

RELATED LINKS

Chord Assistant on page 973
Assigning Chords with the Circle of Fifths Assistant on page 960
List Assistant on page 974

Proximity Assistant on page 975

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.

For example, a C chord can be spread over a wide range of pitches, and a pianist chooses different notes than a guitarist. The pitches the pianist plays may also depend on the musical genre.

RELATED LINKS
Player Settings on page 977
Adaptive Voicing on page 977

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.

To set the voicing of a specific chord pad manually, and to prevent it from being 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 this particular chord pad, so that the pad no longer follows the voice leading rules of the voicing reference. To activate adaptive voicing again, activate **Adaptive Voicing** on the chord pads zone extended toolbar.

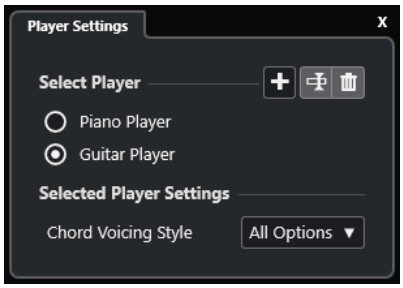
To lock the voicing for a chord pad, you can activate **Lock** on the chord pads zone extended toolbar. This locks this pad for editing and remote control changes and deactivates **Adaptive Voicing**. To unlock the chord pad again, deactivate **Lock** on the chord pads zone extended toolbar.

RELATED LINKS
Players and Voicings on page 977

Player Settings

The **Player Settings** allow you to select a player and a voicing setting that is typical for the particular kind of player.

- To open the **Player Settings**, click **Player Settings** on the chord pads toolbar.



In the **Select Player** section, the following options are available:

List of Added Players

Shows the added players, and allows you to activate a player and use its voicing style for the chord pads.

Add Player

Allows you to add a player.

Rename Selected Player

Allows you to rename the selected player.

Delete Selected Player

Allows you to delete the selected player.

In the **Selected Player Settings** section, the following options are available:

Chord Voicing Style (Guitar Player and Piano Player only)

Allows you to select a chord voicing style for the selected player. This determines how chords are played back, and what pitches are used.

Octave Offset (Basic Player only)

Allows you to determine an offset value for the octave range.

RELATED LINKS
Players and Voicings on page 977
Player Settings on page 977

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. In the global track controls area of the track list, click **Add Track**.
2. Click **Instrument**.
3. In the **Count** value field, select the number of tracks that you want to add.
4. Open the **Instrument** pop-up menu, and select a VST instrument.
5. Click **Add Track**.

   The instrument tracks are added to the track list, and the control panels of the selected VST instrument are opened.
6. Activate **Chord Pad Output Mode**.
7. Click **Player Settings**.
8. Select the first instrument track, select a sound for the VST instrument, and set up a player.

For example, select a piano sound, and activate **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.

9. Select the second instrument track, select a sound for the VST instrument, and set up another player.

   For example, select a guitar sound, and activate **Guitar Player**.

10. Select the next instrument track, and proceed in the same manner as for the other 2 tracks.

    For example, select a string sound, click **Add Player**, and select **Add Basic Player**.

11. 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.

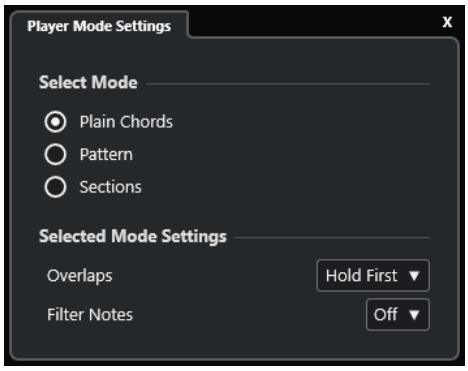
RELATED LINKS

Add Track Dialog – Instrument on page 112

Player Mode Settings

The **Player Mode Settings** allow you to select a player and a voicing setting that is typical for the particular kind of player.

- To open the **Player Mode Settings**, click **Player Mode Settings** on the chord pads toolbar.



Select Mode Section

In the **Select Mode** section, the following options are available:

Plain Chords

Allows you to play back the chords that are assigned to the chord pads as plain chords.

Pattern

Allows you to use the notes of the chords that are assigned to the chord pads to play back a MIDI pattern.

Sections

Allows you play back single notes or groups of notes, so-called sections, of the chords that are assigned to the chord pads. Sections contain the chord notes, starting from

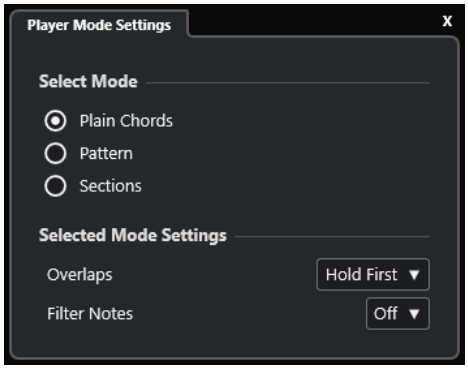
bottom to top: the first section represents the lowest note or voicing of a chord, usually the bass. The second section represents the tenor, and so on.

RELATED LINKS
Selected Mode Settings—Plain Chords on page 980
Selected Mode Settings—Pattern on page 980
Selected Mode Settings—Sections on page 982

Selected Mode Settings—Plain Chords

The player mode **Plain Chords** allows you to play back the chords that are assigned to the chord pads as plain chords.

- On the toolbar, click **Player Mode Settings**, and in the **Select Mode** section, activate **Plain Chords**.



In the **Selected Mode Settings** section, the following options are available:

Overlaps

Allows you to select what happens with the notes of the first chord when you play a chord without releasing the previous chord.

- **Hold First** holds the notes of the first chord. No note-off message is sent. If the chords have common notes, these are not triggered again.
- **Legato** releases the notes of the first chord, except for the common notes. These are held and not triggered again.
- **Stop First** releases the notes of the first chord, including the common notes.

Filter Notes

Allows you to select which keys are filtered.

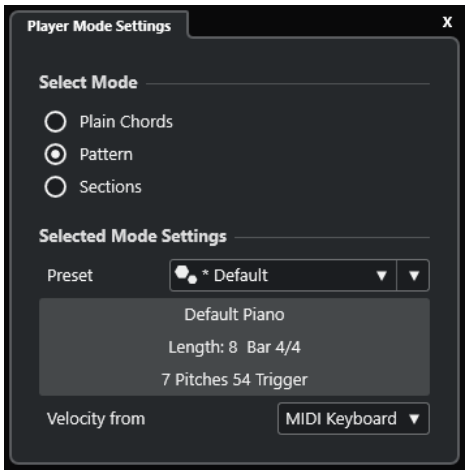
- **Off** filters nothing.
- **From MIDI Thru** filters unassigned keys and keys that are assigned as remote keys for voicings, tensions, and transpose.

RELATED LINKS
Chord Pads Remote Settings Dialog on page 986

Selected Mode Settings—Pattern

The player mode **Pattern** allows you to play back a MIDI pattern using the notes of the chords that are assigned to the chord pads.

- On the toolbar, click **Player Mode**, and in the **Select Mode** section, select **Pattern**.



The following options are available:

In the **Selected Mode Settings** section, the following options are available:

Preset

Allows you to load pattern presets.

Import from MIDI Loop

Allows you to select a MIDI loop that is used as a pattern.

Pattern information field

Shows information about the loaded pattern.

Velocity from

- **Pattern** uses the velocity values from the MIDI loop or the MIDI part that is selected as a pattern.
- **MIDI Keyboard** allows you to determine the velocity values by pressing the keys on your MIDI keyboard harder or more softly.

NOTE

You can drop a MIDI part from the event display onto the **Player Mode** section of the toolbar. This automatically sets the player mode to **Pattern** and uses the MIDI part as a pattern.

RELATED LINKS

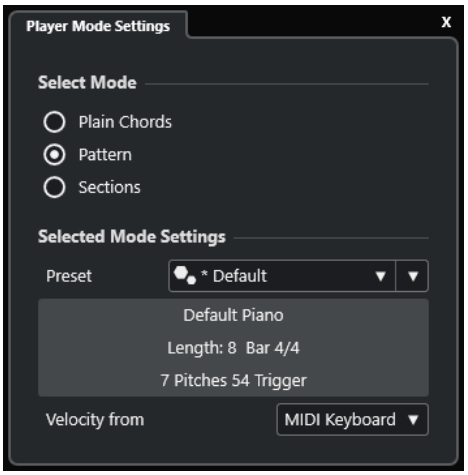
Player Mode Settings on page 979
Using the Pattern Player on page 981

Using the Pattern Player

You can play back a MIDI pattern using the notes of the chords that are assigned to the chord pads.

PROCEDURE

1. On the chord pads toolbar, click **Player Mode**.
2. In the **Select Mode** section, activate **Pattern**.



3. In the **Selected Mode Settings** section, do one of the following:
   - Open the **Preset** pop-up menu, and select a pattern preset.
   - Click **Import from MIDI Loop**, and select a MIDI loop.

     NOTE

     The loop or part must have between 3 and 5 voices. The number of voices is indicated in the **Voices** column of the **Filters** list.
4. In the **Velocity from** field, select a velocity source for the notes.
5. Trigger the chord pads.

RESULT

The chord pads play back the pattern of the loop or part using the notes of the assigned chord.

NOTE

In **Pattern** mode, you can also step through the presets by moving the mouse pointer over the **Preset Browser** field on the chord pads zone toolbar and using the mouse wheel.

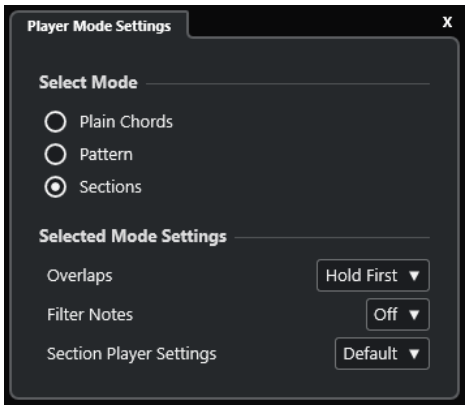
RELATED LINKS

Player Mode Settings on page 979
Selected Mode Settings—Pattern on page 980
Assigning Voices to Notes on page 942
Setting up the Results List Columns on page 627

Selected Mode Settings—Sections

The player mode **Sections** allows you to play back single notes or groups of notes, so-called sections, of the chords that are assigned to the chord pads. 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.

- On the toolbar, click **Player Modes**, and in the **Select Mode** section, activate **Sections**.



The following options are available:

Overlaps

Allows you to select what happens with the notes of the first chord when you play a chord without releasing the previous chord.

- **Hold First** holds the notes of the first chord. No note-off message is sent. If the chords have common notes, these are not triggered again.
- **Legato** releases the notes of the first chord, except for the common notes. These are held and not triggered again.
- **Stop First** releases the notes of the first chord, including the common notes.

Filter Notes

Allows you to select which keys are filtered.

- **Off** filters nothing.
- **From MIDI Thru** filters unassigned keys and keys that are assigned as remote keys for voicings, tensions, and transpose.

Section Player Settings

Opens the **Custom Section Player Settings** pane.

RELATED LINKS
Chord Pads Remote Settings Dialog on page 986
Custom Section Player Settings Pane on page 984

Playing Back Chord Sections

You can play back chord sections of a chord pad. You can play the sections and their corresponding chord notes by using the remote keys that are assigned to them, in combination with the remote keys that are assigned to a chord pad. To view and edit the remote key assignment for the sections, you can open the **Chord Pads Remote Settings** dialog.

PREREQUISITE

You have added an instrument track with an instrument assigned to your project. You have record-enabled the instrument track. You have connected and set up a MIDI keyboard. On the chord pads toolbar, you have activated **Chord Pad Output Mode**.

PROCEDURE

1. Click **Player Mode**, and in the **Select Mode** section, activate **Sections**.

   On the keyboard, the section remote range is highlighted in brown.

2. On your MIDI keyboard, press any key that corresponds to the pads remote range.

   In most cases, this triggers the chord pad. However, in **Sections** mode, you do not hear anything unless you press a section remote key.

3. On your MIDI keyboard, press any key that corresponds to the section remote range.

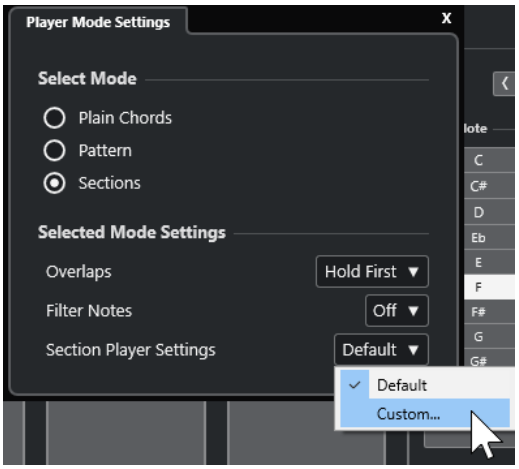
RESULT

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.

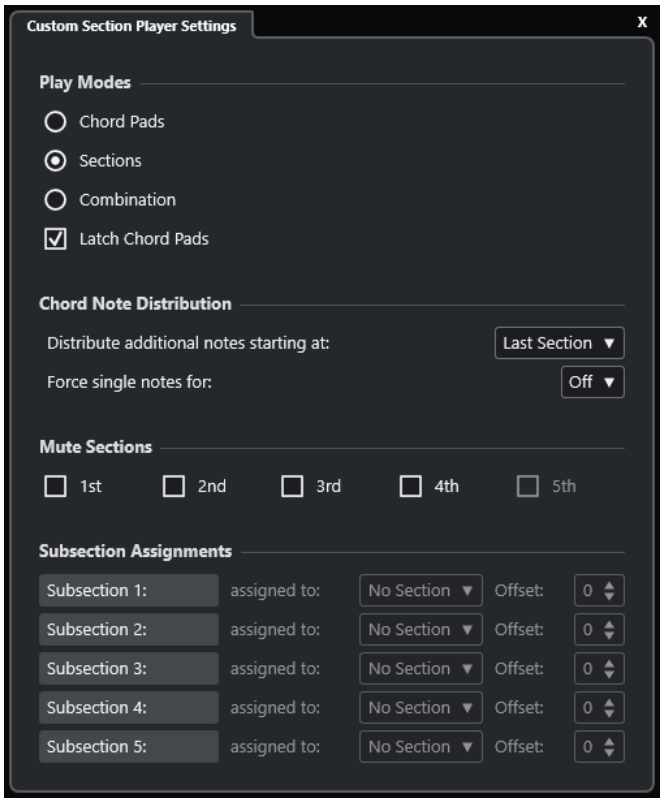
Custom Section Player Settings Pane

The custom settings for the section player allow you to determine how to trigger the sections, how to distribute them, or whether to play them at all. Only sections with remote keys assigned are available.

- On the toolbar, click **Player Mode**. In the **Select Mode** section, activate **Sections**. In the **Selected Mode Settings** section, open the **Section Player Settings** pop-up menu, and select **Custom**.



The following settings are available:



Play Modes

- **Chord Pads**

  Allows you to hear the chord notes that correspond to the section whenever you press the remote key for a specific section on your MIDI keyboard.

- **Sections**

  Allows you to hear the chord notes that correspond to a section, once you press a key assigned to a chord pad on your MIDI keyboard and the remote key for a specific 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.

- **Latch Chord Pads**

  Allows you to hear sections for as long as you keep the section remote keys pressed, even after releasing the remote key for the chord pad. We recommend to activate this for sections and combination modes.

Chord Note Distribution

Allows you to determine how to distribute chord notes among the sections in case the chord that is assigned to the chord pad has more notes than sections.

Mute Sections

Prevents a section from being played, allowing you to exclude specific voicings from playback.

Subsection Assignments

Only available if you have set up remote keys for subsections via the **Player Remote Control** tab.

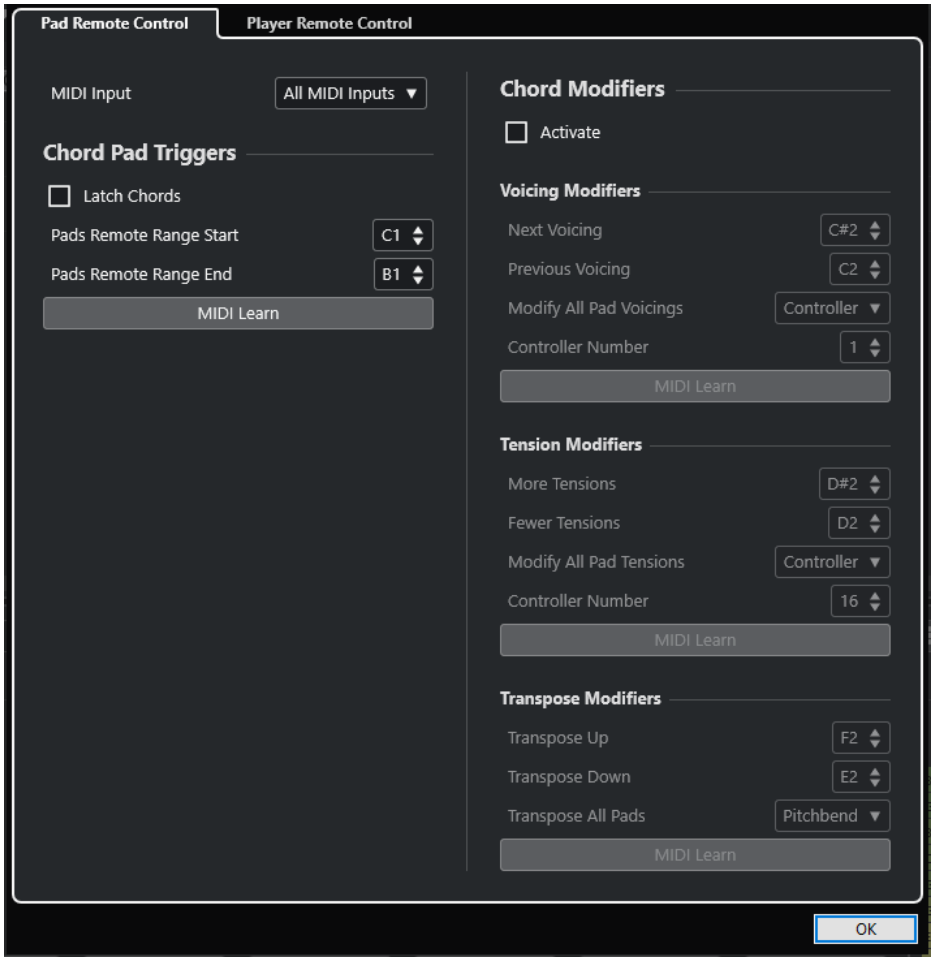
- Allows you to assign a subsection to a section via the **assigned to** pop-up menu.

- Allows you to specify an offset from the section via the **Offset** controls. As a result, when you press the remote key for the subsection, you hear the chord notes that correspond to the section, transposed by the specified offset.

Chord Pads Remote Settings Dialog

The **Chord Pads Remote Settings** dialog allows you to change the remote key assignments and the layout of the chord pads.

- To open the **Chord Pads Remote Settings** dialog, click **Chord Pads Remote Settings**.



The following tabs are available:

Pad Remote Control

Allows you to specify a range of remote keys that trigger the chords that are assigned to the chord pads. In addition, you can also set up chord modifiers that allow you to specify how to play back the chords.

Player Remote Control

Allows you to specify a range of remote keys that trigger the chord notes and that select or mute players.

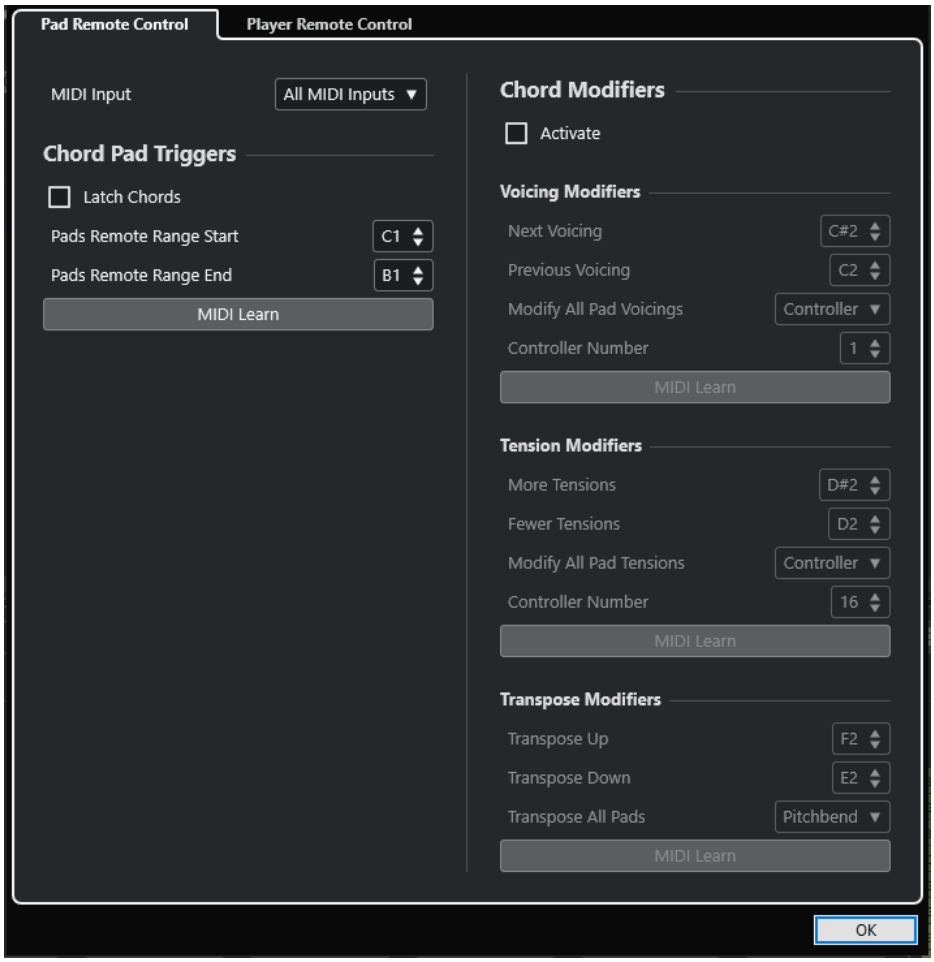
RELATED LINKS

Pad Remote Control Tab on page 987
Player Remote Control Tab on page 990

Pad Remote Control Tab

The **Pad Remote Control** tab in the **Chord Pads Remote Settings** dialog allows you to define a range of remote keys that trigger the chords that are assigned to the chord pads.

- To open the **Pad Remote Control** tab, click **Chord Pads Remote Settings** . In the **Chord Pads Remote Settings** dialog, click **Pad Remote Control**.



MIDI Input

Allows you to select a MIDI input.

Chord Pad Triggers

In the **Chord Pad Triggers** section, the following options are available:

Latch Chords

Activate this if you want the chord pad to play back until it is triggered again.

Pads Remote Range Start

Allows you to set the start note for the remote range. By default, this is set to C1.

Pads Remote Range End

Allows you to set the end note for the remote range. By default, this is set to B1.

MIDI Learn

Activates/Deactivates the **MIDI Learn** function to assign MIDI input to the pads remote range.

Chord Modifiers

In the **Chord Modifiers** section, the following option is available:

Activate

Activates/Deactivates the remote key assignment for voicings, tensions, and transposition. If this option is deactivated, only the remote key assignment for the pads remote range is active.

NOTE

If you use the remote keys for voicings, tensions, or transposition after releasing the remote key for the chord pad, the selected chord pad is affected.

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.

In the **Voicing Modifiers** section, the following options are available:

Next Voicing

Plays back the next voicing of the first assigned and selected pad and updates all selected pads accordingly.

Previous Voicing

Plays back the previous voicing of the first assigned and selected pad and updates all selected pads accordingly.

Modify All Pad Voicings

Allows you to set the voicings for all chord pads using one of the following modifiers:

- **No Modifier**
- **Aftertouch**
- **Pitchbend**
- **Controller**

  If you select **Controller**, you can set the controller number in the **Controller Number** field.

MIDI Learn

Activates/Deactivates the **MIDI Learn** function to assign MIDI input to the parameters for changing voicings.

In the **Tension Modifiers** section, the following options are available:

More Tensions

Plays back the first assigned and selected pad with more tensions, and updates all selected pads accordingly.

Fewer Tensions

Plays back the first assigned and selected pad with fewer tensions, and updates all selected pads accordingly.

Modify All Pad Tensions

Allows you to set the tensions for all chord pads using one of the following modifiers:

- **No Modifier**

- **Aftertouch**
- **Pitchbend**
- **Controller**

  If you select **Controller**, you can set the controller number in the **Controller Number** field.

MIDI Learn

Activates/Deactivates the **MIDI Learn** function to assign MIDI input to the parameters for changing tensions.

In the **Transpose Modifiers** section, the following options are available:

Transpose Up

Plays back the first assigned and selected pad, and transposes it and all selected pads upwards.

Transpose Down

Plays back the first assigned and selected pad, and transposes it and all selected pads downwards.

Transpose All Pads

Allows you to transpose all chord pads using one of the following modifiers:

- **No Modifier**
- **Aftertouch**
- **Pitchbend**
- **Controller**

  If you select **Controller**, you can set the controller number in the **Controller Number** field.

MIDI Learn

Activates/Deactivates the **MIDI Learn** function to assign MIDI input to the parameters for changing transpose.

RELATED LINKS
Chord Pads Remote Settings Dialog on page 986
Changing the Pads Remote Range on page 989

Changing the Pads Remote Range

You can extend 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. On the toolbar, click **Chord Pads Remote Settings**.
2. Open the **Pad Remote Control** tab.
3. In the **Chord Pad Triggers** section, do one of the following:
   - Activate **MIDI Learn** so that the button lights up. On your MIDI keyboard, press the 2 keys that you want to assign as the start and the end of the range.
   - Enter a new value in the **Pads Remote Range Start** and **Pads Remote Range End** fields.

RESULT

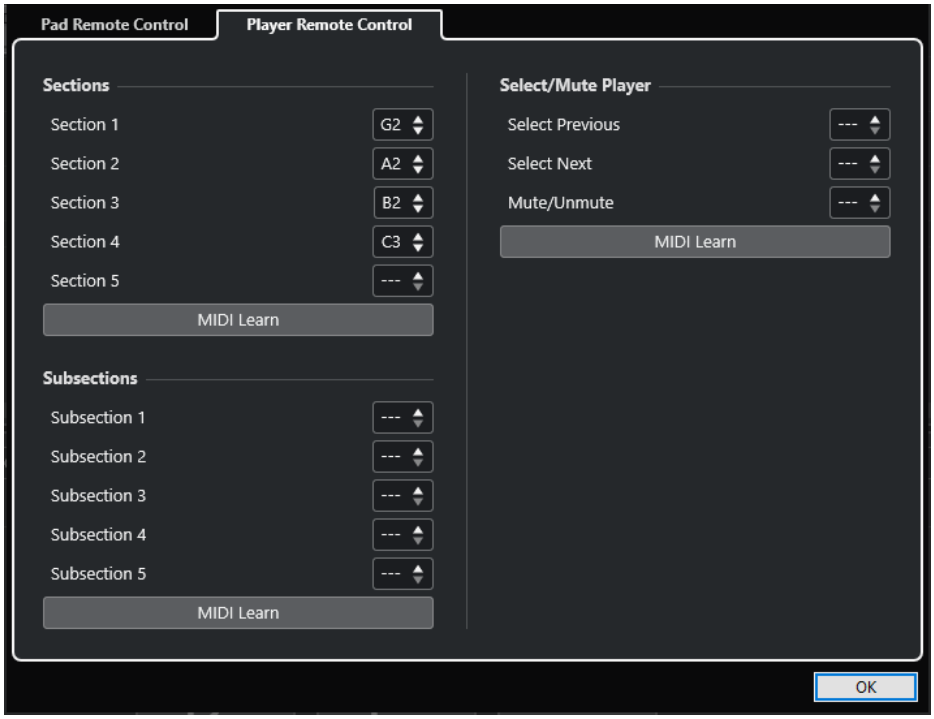
On the keyboard, the indication for pads remote range is changed.

RELATED LINKS
Pad Remote Control Tab on page 987
Chord Pads Remote Settings Dialog on page 986

Player Remote Control Tab

The **Player Remote Control** tab in the **Chord Pads Remote Settings** dialog allows you to define a range of remote keys that trigger the chords that are assigned to the sections.

- To open the **Player Remote Control** tab, click **Chord Pads Remote Settings**. In the **Chord Pads Remote Settings** dialog, click **Player Remote Control**.



Sections

Sections

Allows you to assign remote keys for up to 5 sections. You can use the section remote keys in combination with a pad remote key to trigger the chord notes that correspond to the sections.

MIDI Learn

Activates/Deactivates the **MIDI Learn** function to assign MIDI input to the sections.

Subsections

Subsections

Allows you to assign remote keys for up to 5 subsections. You can use the subsection remote keys in combination 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.

MIDI Learn

Activates/Deactivates the **MIDI Learn** function to assign MIDI input to subsections.

Select/Mute Player

Select/Mute Player

Allows you to assign remote keys for player navigation and muting if you use different players on multiple tracks.

MIDI Learn

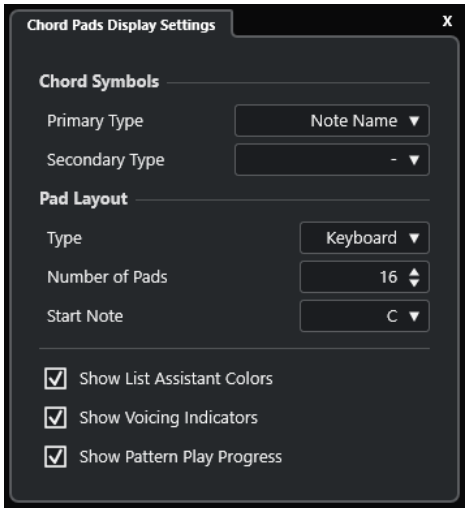
Activates/Deactivates the **MIDI Learn** function to assign MIDI input to the parameters for selecting and muting players.

RELATED LINKS
Selected Mode Settings—Sections on page 982

Chord Pads Display Settings Pane

The **Chord Pads Display Settings** pane allows you to change the display and the layout of the chord pads.

- To open the **Chord Pads Display Settings** pane, click **Chord Pads Display Settings** on the chord pads zone toolbar.



Chord Symbols

Primary Type

Allows you to select the primary display type for chord symbols. The following options are available:

- **Note Name**

  Allows you to display chord symbols with note names, without reference to any key.

- **Roman Numerals**

  Allows you to display chord symbols in a chord notation system, based on scale degrees that are written in roman numerals. They refer to the location or the function of a chord, relative to the root key.

- **Nashville Number System**

Allows you to display chord symbols in a chord notation system that works independently of the key of the song. Hence, chord 1 always represents the tonic, regardless of the key that you are in.

Secondary Type

Allows you to select the secondary display type for chord symbols. The secondary type is displayed below the primary type, provided that there is enough space. It features the same options as the primary type.

Pad Layout

Type

Activate **Keyboard** to show the chord pads in a keyboard layout.

Activate **Grid** to show the chord pads in a grid layout.

Number of Pads (Keyboard mode only)

Allows you to select the number of pads that are displayed in the keyboard layout.

Start Note (Keyboard mode only)

Allows you to select the start note for the first chord pad in the keyboard layout.

Number of Rows (Grid mode only)

Allows you to select the number of rows to be displayed in the grid layout.

Number of Columns (Grid mode only)

Allows you to select the number of columns to be displayed in the grid layout.

NOTE

After changing the pad layout, you may need to adjust the remote setup.

Show List Assistant Colors

Allows you to show/hide the list assistant pad coloring on the chord pads.

Show Voicing Indicators

Allows you to show/hide the voicing indicators on the chord pads.

Show Pattern Play Progress

Allows you to show/hide the progress of the pattern player on the chord pads.

RELATED LINKS

Chord Pads on page 953
List Assistant on page 974
List Assistant Color Indicator on page 954

Project Input Transformer

The **Project Input Transformer** is a powerful tool for search and replace functions performed on MIDI data.

The **Project Input Transformer** works in real time. It filters out and transforms MIDI data while it is recorded. All settings that you make in the **Project Input Transformer** always affect the actual MIDI events you record.

You can use the **Project Input Transformer** as follows:

- You can set up filter conditions to find specific elements.

  These can be elements of a specific type, with specific attributes or values, or on particular positions, in any combination. You can combine any number of filter conditions and make composite conditions using **And**/**Or** operators.
- You can select the basic function to be performed.

  You can, for example, change the properties of the found elements or remove the elements.
- You can set up a list of actions that specifies exactly what is done.

  This is not necessary for all functions.

By combining filter conditions, functions, and specific actions, you can perform very powerful processing.

In order to do so, you need some knowledge about how MIDI messages are structured. However, there is also an extensive selection of presets, allowing you to access these processing powers without delving into more complicated aspects.

NOTE

- The settings of the **Project Input Transformer** affect all MIDI inputs and thus all MIDI tracks. To transform MIDI data coming to a specific MIDI track before it is recorded, use the **Track Input Transformer** instead.
- You can also use the **Transformer** MIDI effect to transform MIDI data. See the separate document **Plug-in Reference**.

RELATED LINKS

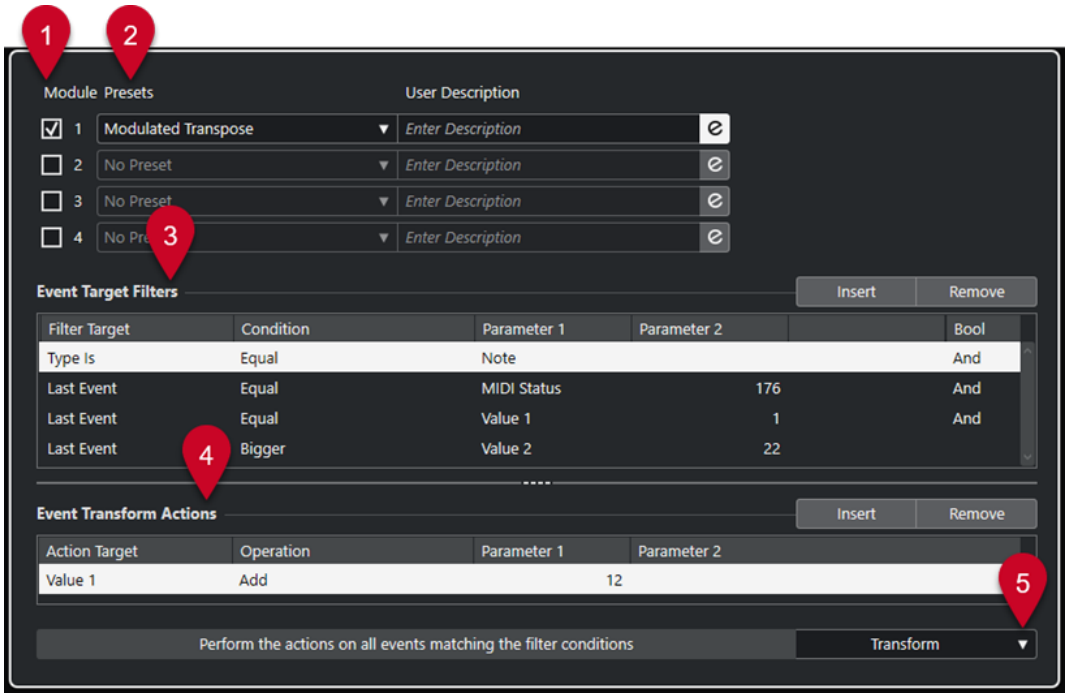
Project Input Transformer Window Overview on page 993
Track Input Transformer on page 748

Project Input Transformer Window Overview

The **Project Input Transformer** allows you to combine filter conditions, functions, and actions to perform very powerful MIDI processing.

To open the **Project Input Transformer**, do one of the following:

- Select **Project** > **Project Input Transformer**.
- Select a MIDI track, and in the **Inspector**, open the **Routing** section. Open the **Input Transformer** pop-up menu, and activate **Project**. Open the **Input Transformer** pop-up menu again, and select **Open Panel**.



1 **Module**

Allows you to view and edit a module.

2 **Preset**

Allows you to select a preset.

3 **Event Target Filters**

Allows you to specify the conditions, such as type, attribute, value, or position, that a specific element must meet to be found. You can combine any number of filter conditions using **And** and **Or** operators.

4 **Event Transform Actions**

Allows you to set up a list of actions that specifies exactly what is done. This is not necessary for all functions.

5 **Functions**

Allows you to select a function.

NOTE

You can resize the **Event Target Filters** and the **Event Transform Actions** sections by dragging the divider between them.

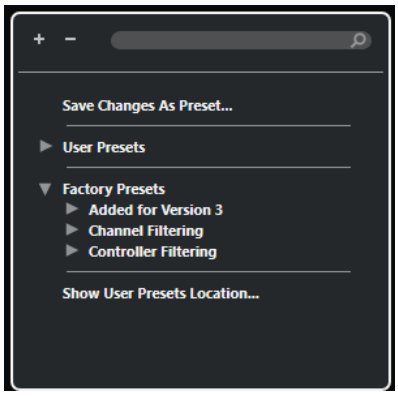
RELATED LINKS

Track Input Transformer Window Overview on page 748

Project Input Transformer Presets Browser

The presets browser of the **Project Input Transformer** allows you to load, save, and manage presets.

- To open the presets browser, open the **Project Input Transformer**, and click a **Presets** field.



Expand All

Expands the tree.

Collapse All

Collapses the tree.

Search

Allows you to search for presets by typing in the preset name or parts of the preset or category name.

Save Changes as Preset

Allows you to save your changes as a user preset.

User Presets

Lists all user presets that you have saved.

Factory Presets

Lists all factory presets.

Show User Presets Location

Opens a file dialog containing the user presets. User presets are saved in a different location than the factory presets.

Project Input Transformer Presets

The **Project Input Transformer** comes with a set of factory presets, but you can also save your own user presets.

- Factory presets are saved in a dedicated **Input Transformer** folder in the **Presets** folder of the application.
- User presets are saved in a dedicated **Input Transformer** folder under: `\Users\<user name>\Documents\Steinberg\<program name>\User Presets`

  NOTE

  You can access the user presets location by clicking **Show User Presets Location** in the presets browser.

  You can rename, delete, and organize user presets in folders.

Automatic Migration of Presets from Earlier Versions

If you update Cubase from an earlier version, all factory and user presets that are found in the **Preferences** folder are automatically migrated. You can find them in the **Earlier Presets** subfolder of your current **User Presets** folder.

RELATED LINKS
Project Input Transformer Presets Browser on page 994
Selecting Project Input Transformer Presets on page 996
Saving Project Input Transformer User Presets on page 996

Selecting Project Input Transformer Presets

PROCEDURE

1. In the **Project** window, select a MIDI track.
2. In the **Inspector** for the MIDI track, open the **Input Transformer** pop-up menu, and activate **Project**.
3. Open the **Input Transformer** pop-up menu again, and select **Open Panel**.
4. Click in a **Presets** field to open the presets browser.
5. Do one of the following:
   - Enter a preset name in the search field, and in the reduced tree, select the preset.
   - Click **Expand Tree** to show all presets, and select the preset.
6. Activate the **Edit** button to open the **Event Target Filters** and the **Event Transform Actions** sections.

RESULT

All **Event Target Filters**, **Event Transform Actions**, and **Functions** that were saved in the preset are shown. The preset settings will affect the MIDI events that you record.

Saving Project Input Transformer User Presets

You can save settings that you want to use again as presets.

PROCEDURE

1. Set up the **Event Target Filters**, the **Event Transform Actions**, and the functions that you want to include in your user preset.

   The preset name in the **Presets** field is shown with an asterisk to indicate that the preset contains unsaved changes.
2. Click the **Presets** field to open the presets browser.
3. Click **Save Changes as Preset**.

   A file dialog opens the corresponding folder at the **User Presets** location.
4. Enter a file name for your preset, and click **Save**.

RESULT

The preset is saved and listed in the presets browser under **User Presets**.

AFTER COMPLETING THIS TASK

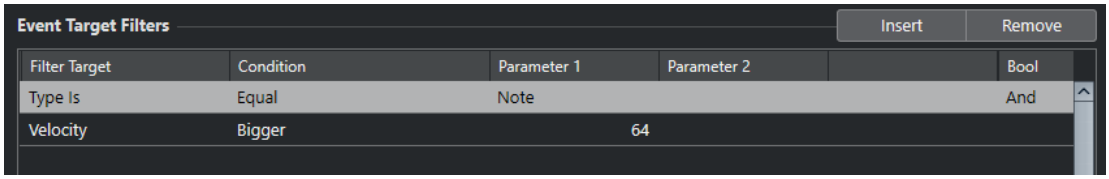
In the file browser of your operating system, you can navigate to the user presets location and create subfolders to organize your user presets. Here, you can also rename, delete, and move presets to other folders.

RELATED LINKS

Project Input Transformer Window Overview on page 993

Project Input Transformer Filter Settings

The **Event Target Filters** list is where you set up the filters, determining which elements to find. The list can contain one or several filters, each on a separate line.



Filter Target

Sets the property of the element. This setting affects the available options in the other columns.

Condition

Determines the comparison of 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

Determines which value the element properties are compared to. This depends on the **Filter Target**.

Parameter 2

Only available if one of the **Range** options is set in the **Condition** column. Allows you to find all elements with values inside or outside the range between **Parameter 1** and **Parameter 2**.

Bool

Allows you to insert the boolean operators **And** and **Or** when creating filters with multiple lines.

NOTE

If you have already defined filters and/or applied a preset but want to start again from scratch, you can initialize the settings by selecting the **Init** preset from the presets browser.

NOTE

You can also set up filters by dragging MIDI events into the **Event Target Filters** list.

If the list contains no entries, a MIDI event dragged into this section sets filters, including the state and type of the event. If it contains entries, the dragged event initializes the matching parameters. For example, if **Length** is used, the length is set according to the length of the event.

Project Input Transformer Filter Targets

Subtype

Searches for different meanings depending on the event type.

Main Value

Searches for different meanings depending on the event type.

Channel

- To search for MIDI channels, set up the MIDI channel in the **Parameter 1** column. If you select **Inside Range** or **Outside Range**, use **Parameter 1** and **Parameter 2** to set the start and the end of the range.

NOTE

Searching for MIDI channels is useful if you have recorded MIDI from an instrument sending on several different channels or if you have imported a MIDI file of type 0 with a single track, containing MIDI events with different channel settings.

Type

Searches for events by their type.

- To search for event types, set up the event type in the **Parameter 1** column.

Secondary Value

Searches for note-off velocities of note events.

Last Event

Searches for events that have already passed the **Input Transformer** or the **Logical Editor**. The condition must be combined with **Parameter 1** and **Parameter 2**.

MIDI Event Values

MIDI events can be composed of different values.

NOTE

If you load an old preset, **Subtype**, **Main Value**, and **Secondary Value** might be shown as **Value 1**, **Value 2**, and **Value 3**.

These values have different meanings for different event types:

Note

- **Subtype**
  The note number/pitch.
- **Main Value**
  The note velocity.

Poly Pressure

- **Subtype**
  The key that was pressed.
- **Main Value**
  The amount of pressure for the key.

Controller

- **Subtype**

  The type of controller, displayed as a number.
- **Main Value**

  The MIDI controller value.

Program Change

- **Subtype**

  The program change number.
- **Main Value**

  Not used.

Aftertouch

- **Subtype**

  The amount of pressure.
- **Main Value**

  Not used.

Pitchbend

- **Subtype**

  The tuning of the bend. Not always used.
- **Main Value**

  The coarse amount of bend.

NOTE

SysEx (System Exclusive) events do not use **Subtype** and **Main Value**.

Project Input Transformer Filter Conditions

Depending on the **Filter Target** setting, the following options can be selected in the **Condition** column:

Equal

Has the 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. **Parameter 1** should be the lower value and **Parameter 2** the higher one.

Outside Range

Has a value that is not between the values set up in the **Parameter 1** and **Parameter 2** columns.

Note is Equal to

Is the note specified in the **Parameter 1** column only, regardless of the octave. For example, it allows you to find all C notes, in all octaves. This is only available if the **Filter Target** is set to **Subtype**, that is, **Pitch**.

All Types

All event types.

NOTE

The conditions for the **Property** filter target are different.

RELATED LINKS

Setting up Project Input Transformer Filter Lines on page 1000

Setting up Project Input Transformer Filter Lines

PROCEDURE

1. In the **Project Input Transformer**, activate one of the **Module** options.
2. Click **Edit** to open the **Event Target Filters** and the **Event Transform Actions** sections.
3. In the **Event Target Filters** section, click **Insert**.
   A filter line is added to the list.
4. Click in the **Filter Target** column, and select an option from the pop-up menu.
5. Click in the **Condition** column, and select an option from the pop-up menu.
6. Click in the **Parameter 1** column, and enter a value.

   NOTE

   Some **Condition** options also require a value for **Parameter 2**.

RELATED LINKS

Project Input Transformer Filter Targets on page 998
Project Input Transformer Filter Conditions on page 999
Project Input Transformer Functions on page 1001
Setting up Project Input Transformer Actions on page 1003

Setting up Multiple Project Input Transformer Filter Lines

You can add multiple filter lines and combine them by using boolean **And** and **Or** operators.

PROCEDURE

1. In the **Event Target Filters** section, click **Insert**.

A filter line is added to the list.

2. Click in the **Filter Target** column, and select an option from the pop-up menu.
3. Click in the **Condition** column, and select an option from the pop-up menu.
4. Click in the **Parameter 1** column, and enter a value.
5. In the **Event Target Filters** section, click **Insert** to insert another filter line, and set it up.
6. Click the **Bool** column of the first filter line, and do one of the following:
   - Activate **And** if you want both filter lines to be fulfilled for an element to be found.
   - Activate **Or** if you want at least one of the filter lines to be fulfilled for an element to be found.

RELATED LINKS
Project Input Transformer Filter Targets on page 998
Project Input Transformer Filter Conditions on page 999
Project Input Transformer Functions on page 1001
Setting up Project Input Transformer Actions on page 1003

Searching for Note Pitches or Velocities

PROCEDURE

1. In the **Event Target Filters** section, click **Insert**.
2. Open the **Filter Target** pop-up menu, and do one of the following:
   - To search for specific pitches, select **Subtype**, and in the **Parameter 1** column, enter a pitch, either as a note name, such as C3, D#4, etc., or as a MIDI note number from 0 to 127.

     NOTE

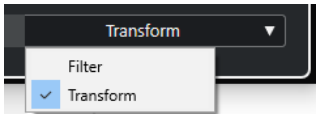
     To find all notes of a specific key in all octaves, open the **Condition** pop-up menu, and select **Note is Equal to**.

   - To search for specific velocities, select **Main Value**.
3. Click **Insert** to add another condition line.

   Parameter 1 is automatically set to **Note**. In addition to this, **Subtype** and **Main Value** are displayed as **Pitch** and **Velocity**, respectively.

Project Input Transformer Functions

The **Functions** pop-up menu allows you to select the basic type of editing to be performed.



The following **Functions** are available:

Filter

Filters out, that is, excludes from the recording, any events that match the **Event Target Filters**.

Transform

Transforms all events that match the **Event Target Filters** according to the **Event Transform Actions**.

The following **Functions** are only available in the **Transformer** MIDI effect:

Insert

Creates new elements and inserts these into the output stream. The new elements are based on the elements found by the filter conditions, but with any changes you have set up in the action list applied.

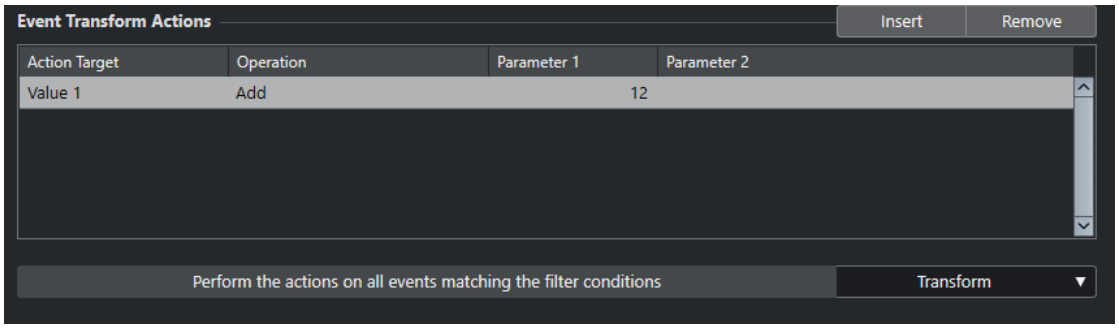
Insert Exclusive

Transforms the found elements according to the action list. All elements that do not meet the filter conditions are removed from the output stream.

The **Transformer** MIDI effect allows you to transform MIDI data. For further information, see the separate document **Plug-in Reference**.

Project Input Transformer Action Settings

Action Targets in the **Event Transform Actions** section allow you to select the property that is changed in the events. Actions are only available if you set the functions pop-up menu to **Transform**.



To set up an action, make the following settings:

Action Target

Sets the property that is changed in the events.

Operation

Determines what to do with the **Action Target**.

Parameter 1

Sets a value for the **Action Target**.

Parameter 2

Only available for **Operations** that define a range.

RELATED LINKS
Project Input Transformer Functions on page 1001
Project Input Transformer Filter Conditions on page 999

Project Input Transformer Action Targets

Action Targets in the **Event Transform Actions** section allow you to select the property that is changed in the events. Actions are only available if you set the functions pop-up menu to **Transform**.

Subtype

Adjusts **Subtype** in the events. What is displayed depends on the event type. For notes, **Subtype** is the pitch.

Main Value

Adjusts **Main Value** in the events. What is displayed depends on the event type. For notes, **Main Value** is the velocity value.

Channel

Allows you to change the MIDI channel setting.

Type

Allows you to change the event type, that is, transform aftertouch events to modulation events, or pitchbend events to VST 3 tuning events.

Secondary Value

Adjusts **Secondary Value** in the events, which is used for note-off velocity when searching for properties.

Setting up Project Input Transformer Actions

You can set up actions, that is, changes that are made to the events found. Actions are only available for the function type **Transform**.

PREREQUISITE

You have set up at least one filter line in the **Event Target Filters** section. You have set the functions pop-up menu to **Transform**.

PROCEDURE

1. In the **Event Transform Actions** section, click **Insert**.
   An action line is added to the list.
2. Click in the **Action Target** column, and select an option from the pop-up menu.
3. Click in the **Operation** column, and select an option from the pop-up menu.
4. Click in the **Parameter 1** column, and enter a value.

   NOTE

   Some **Operation** options also require a value for **Parameter 2**.
5. Click **Apply** to apply the defined actions.

RELATED LINKS

Setting up Project Input Transformer Filter Lines on page 1000
Project Input Transformer Functions on page 1001
Project Input Transformer Action Targets on page 1003
Project Input Transformer Operations on page 1004

Project Input Transformer Operations

The **Operation** column allows you to determine what to do with the **Action Target**.

The available operations depend on the selected **Action Target**. The following options are available:

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** with the value specified in the **Parameter 1** column.

Divide by

Divides the **Action Target** by the value specified in the **Parameter 1** column.

Round by

Rounds the **Action Target** value using the value specified in the **Parameter 1** column.

Set Random Values Between

Sets the **Action Target** value to a random value within the range specified by **Parameter 1** and **Parameter 2**. Note that these can be set to negative values.

Set to Fixed Value

Sets the **Action Target** to the value specified in the **Parameter 1** column.

Set Relative Random Values Between

Adds a random value to the current **Action Target** value. The added random value is within the range specified by **Parameter 1** and **Parameter 2**. These can be set to negative values.

Use Subtype

This is only available if you set **Action Target** to **Main Value**. If this option is selected, the **Subtype** setting in each event is copied to the **Main Value** setting.

Use Main Value

This is only available if you set **Action Target** to **Subtype**. If this option is selected, the **Main Value** setting in each event is copied to the **Subtype** setting.

Mirror

This is only available if you set **Action Target** to **Subtype** or **Main Value**. When this option is selected, the values are mirrored around the value set in the **Parameter 1** column.

For notes, this inverts the scale, with the key set in the **Parameter 1** column as the center point.

Transpose to Scale

This is only available if you set **Action Target** to **Subtype** and if the filter conditions are specifically set up to find notes, that is, if you added the **Type = Note** filter condition line. When **Transpose to Scale** is selected, you can specify a musical scale using the **Parameter 1** and **Parameter 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 is transposed to the closest note in the selected scale.

Logical Editor

The **Logical Editor** is a powerful tool for search and replace functions performed on MIDI data.

You can use the **Logical Editor** as follows:

- You can set up filter conditions to find specific elements.

  These can be elements of a specific type, with specific attributes or values, or on particular positions, in any combination. You can combine any number of filter conditions and make composite conditions using **And**/**Or** operators.
- You can select the basic function to be performed.

  You can, for example, change the properties of the found elements or remove the elements.
- You can set up a list of actions that specifies exactly what is done.

  This is not necessary for all functions.

By combining filter conditions, functions, and specific actions, you can perform very powerful processing.

In order to do so, you need some knowledge about how MIDI messages are structured. However, there is also an extensive selection of presets, allowing you to access these processing powers without delving into more complicated aspects.

RELATED LINKS
Logical Editor Presets Browser on page 1006

Logical Editor Window Overview

The **Logical Editor** window allows you to combine filter conditions, functions, and actions to perform very powerful MIDI processing.

- To open the **Logical Editor**, select **MIDI** > **Logical Editor** > **Setup**.

1 **Preset**

  Allows you to select a preset.

2 **Event Target Filters**

  Allows you to specify the conditions, such as type, attribute, value, or position, that a specific element must meet to be found. You can combine any number of filter conditions using **And** and **Or** operators.

3 **Event Transform Actions**

  Allows you to set up a list of actions that specifies exactly what is done. This is not necessary for all functions.

4 **Functions**

  Allows you to select a function.

5 **Apply**

  Applies your settings.

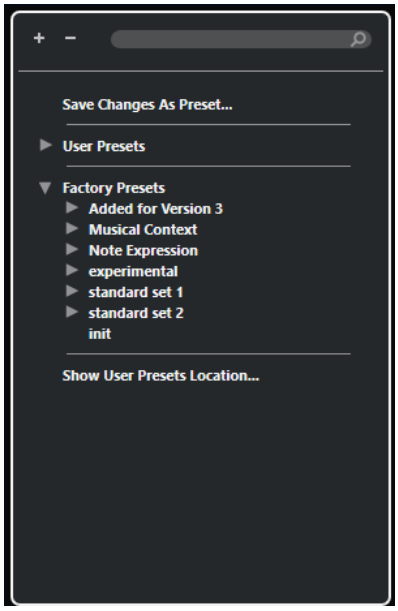
NOTE

You can resize the **Event Target Filters** and the **Event Transform Actions** sections by dragging the divider between them.

Logical Editor Presets Browser

The presets browser of the **Logical Editor** allows you to load, save, and manage presets.

- To open the presets browser, open the **Logical Editor**, and click the **Preset** field.



Expand All

Expands the tree.

Collapse All

Collapses the tree.

Search

Allows you to search for presets by typing in the preset name or parts of the preset or category name.

Save Changes as Preset

Allows you to save your changes as a user preset.

User Presets

Lists all user presets that you have saved.

Factory Presets

Lists all factory presets.

Show User Presets Location

Opens a file dialog containing the user presets. User presets are saved in a different location than the factory presets.

Logical Editor Presets

The **Logical Editor** comes with a set of factory presets, but you can also save your own user presets.

Cubase uses dedicated and separate locations for factory presets and user presets:

- Factory presets are saved in a dedicated **Logical Edit** folder in the **Presets** folder of the application.
- User presets are saved in a dedicated **Logical Edit** folder under `\Users\<user name>\Documents\Steinberg\<program name>\User Presets`.

  NOTE

  You can access the user presets location by clicking **Show User Presets Location** in the presets browser.

  You can rename, delete, and organize user presets in folders.

Automatic Migration of Presets from Earlier Versions

If you update Cubase from an earlier version, all factory and user presets that are found in the **Preferences** folder are automatically migrated. You can find them in the **Earlier Presets** subfolder of your current **User Presets** folder.

RELATED LINKS
Logical Editor Presets Browser on page 1006
Saving Logical Editor User Presets on page 1008
Selecting Logical Editor Presets on page 1007

Selecting Logical Editor Presets

PROCEDURE

1. In the **Project** window, select a MIDI part.
2. Select **MIDI** > **Logical Editor** > **Setup** to open the **Logical Editor**.
3. Click in the **Presets** field to open the presets browser.
4. Do one of the following:
   - Enter a preset name in the search field, and in the reduced tree, select the preset.
   - Click **Expand All** to show all presets, and select the preset.
5. Click **Apply** to apply the preset.

RESULT

All **Event Target Filters**, **Event Transform Actions**, and **Functions** that were saved in the preset are shown.

Applying Logical Editor Presets in the Project Window

PROCEDURE

1. In the **Project** window, select a MIDI part.

2. Select **MIDI** > **Logical Editor** > **Apply Preset** to open the preset browser.
3. Do one of the following:
   - Enter a preset name in the search field, and in the reduced tree, select the preset.
   - Click **Expand All** to show all presets, and select the desired preset.

RESULT

All **Event Target Filters**, **Event Transform Actions**, and **Functions** that were saved in the preset are applied to the MIDI parts in the **Project** window.

Saving Logical Editor User Presets

You can save settings that you want to use again as presets.

PROCEDURE

1. Set up the **Event Target Filters**, the **Event Transform Actions**, and the functions that you want to include in your user preset.

   The preset name in the **Presets** field is shown with an asterisk to indicate that the preset contains unsaved changes.
2. Click the **Presets** field to open the presets browser.
3. Click **Save Changes as Preset**.

   A file dialog opens the corresponding folder at the **User Presets** location.
4. Enter a file name for your preset, and click **Save**.

RESULT

The preset is saved and listed in the presets browser under **User Presets**.

AFTER COMPLETING THIS TASK

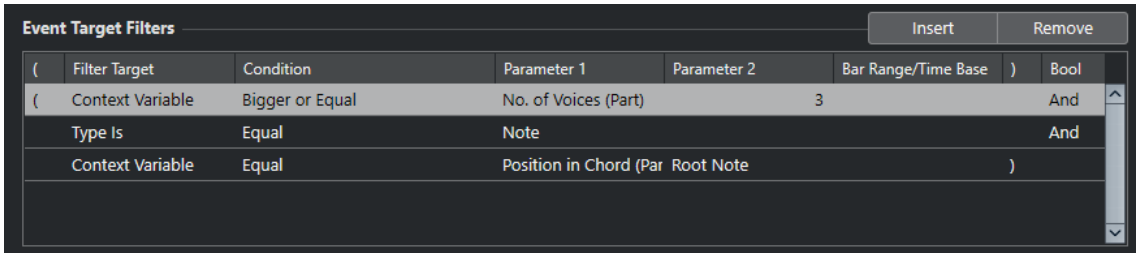
In the file browser of your operating system, you can navigate to the user presets location and create subfolders to organize your user presets. Here, you can also rename, delete, and move presets to other folders.

RELATED LINKS

Logical Editor Window Overview on page 1005

Logical Editor Filter Settings

The **Event Target Filters** list allows you to set up the filters. You can add one or more filter lines to that list.



The following settings are available:

Left bracket

In combination with the right bracket, this allows you to combine multiple filters, that is, multiple lines with the boolean operators And/Or.

Filter Target

Sets the property of the element. This setting affects the available options in the other columns.

Condition

Determines the comparison of 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

Determines which value the element properties are compared to. This depends on the **Filter Target**.

Parameter 2

Only available if one of the **Range** options is set in the **Condition** column. Allows you to find all elements with values inside or outside the range between **Parameter 1** and **Parameter 2**.

Bar Range/Time Base

Only available if the **Filter Target** is set to **Position**. If one of the **Bar Range** options is selected in the **Condition** column, use the **Bar Range/Time Base** column to specify zones within each bar. This allows 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 a time base, such as PPQ, seconds, etc.

Right bracket

In combination with the left bracket, this allows you to combine several filters.

Bool

Allows you to insert the boolean operators **And** and **Or** when creating filters with multiple lines.

NOTE

If you have already defined filters and/or applied a preset but want to start again from scratch, you can initialize the settings by selecting the **Init** preset from the presets browser.

NOTE

You can also set up filters by dragging MIDI events into the **Event Target Filters** list.

If the list contains no entries, a MIDI event dragged into this section sets filters, including the state and type of the event. If it contains entries, the dragged event initializes the matching parameters. For example, if **Length** is used, the length is set according to the length of the event.

RELATED LINKS

Logical Editor Filter Targets on page 1010
Logical Editor Filter Conditions on page 1013
Logical Editor Action Targets on page 1019
Setting up Logical Editor Filter Lines on page 1015
Setting up Multiple Logical Editor Filter Lines on page 1015

Logical Editor Filter Targets

Position

Searches for elements by their position.

- To search for events starting at a specific position, set up the position with **Parameter 1**.
- To search for events inside or outside a specific range, select **Inside Range** or **Outside Range** in the **Condition** column, and set up the start and end positions of the range with **Parameter 1** and **Parameter 2**.
- To search for events starting inside or outside a bar range, in all bars within the current selection, select **Inside Bar Range** or **Outside Bar Range** in the **Condition** column. Click and drag in the graphic bar display in the **Bar Range** column to specify the range.

Length

Searches for events by their length.

- To search for note events of specific lengths, set up the length with **Parameter 1**. If you select **Inside Range** or **Outside Range**, use **Parameter 1** and **Parameter 2** to set the start and the end of the range.

  NOTE

  You must add another filter condition line and select **Type** as a **Filter Target**, **Equal** as a **Condition**, and **Note** as **Parameter 1**.

Subtype

Searches for different meanings depending on the event type.

Main Value

Searches for different meanings depending on the event type.

Channel

- To search for MIDI channels, set up the MIDI channel in the **Parameter 1** column. If you select **Inside Range** or **Outside Range**, use **Parameter 1** and **Parameter 2** to set the start and the end of the range.

NOTE

Searching for MIDI channels is useful if you have recorded MIDI from an instrument sending on several different channels or if you have imported a MIDI file of type 0 with a single track, containing MIDI events with different channel settings.

Type

Searches for events by their type.

- To search for event types, set up the event type in the **Parameter 1** column.

Property

Searches for Cubase-specific properties.

Secondary Value

Searches for note-off velocities of note events.

Last Event

Searches for events that have already passed the **Input Transformer** or the **Logical Editor**. The condition must be combined with **Parameter 1** and **Parameter 2**.

Context Variable

Searches for chord properties and parameters. This allows you to search for the lowest/highest note in a MIDI part or in a selection of notes, the average pitch, or the average velocity.

RELATED LINKS
Subtype, Main Value, and Secondary Value on page 1011
Context Variable on page 1012

Subtype, Main Value, and Secondary Value

MIDI events can be composed of different values.

These values have different meanings for different event types:

NOTE

Subtype and **Main Value** have different meanings for different events. If you set up **Main Value** as the **Filter Target** and you enter **64** as **Parameter 1**, Cubase finds notes with the velocity **64** and controllers with the amount **64**. If this is not what you want, you can add an additional filter condition line where you set up **Type** as the **Filter Target** and specify the event type with **Parameter 1**.

NOTE

If you load an old preset, **Subtype**, **Main Value**, and **Secondary Value** might be shown as **Value 1**, **Value 2**, and **Value 3**.

Note

- **Subtype**
  The note number/pitch.
- **Main Value**
  The note velocity.

Poly Pressure

- **Subtype**
  The key that was pressed.
- **Main Value**
  The amount of pressure for the key.

Controller

- **Subtype**
  The type of controller, displayed as a number.
- **Main Value**
  The MIDI controller value.

Program Change

- **Subtype**
  The program change number.
- **Main Value**
  Not used.

Aftertouch

- **Subtype**

  The amount of pressure.
- **Main Value**

  Not used.

Pitchbend

- **Subtype**

  The tuning of the bend. Not always used.
- **Main Value**

  The coarse amount of bend.

VST 3 Event

- **Subtype**

  Not used.
- **Main Value**

  The value of the VST 3 event parameter. The value range of the VST 3 event is transformed into the MIDI value range. For some operations that require a higher resolution, you can make use of the **VST 3 Value Operation** parameter.

NOTE

SysEx (System Exclusive) events do not use **Subtype** and **Main Value**.

RELATED LINKS
Logical Editor Action Targets on page 1019

Context Variable

If the **Filter Target** is set to **Context Variable**, the following options are available for **Parameter 1**:

Highest/Lowest/Average Pitch

Finds notes with the highest, lowest, or average pitch in the MIDI part or a selection of notes in this part.

Highest/Lowest/Average Velocity

Finds notes with the highest, lowest, or average velocity in the MIDI part or a selection of notes in this part.

Highest/Lowest/Average CC Value

Controllers with the highest, lowest, or average CC value in the MIDI part or a selection of notes in this part.

The following settings for **Parameter 1** require a **Parameter 2**:

No. of Notes in Chord (Part)

If you set **Parameter 2** to the number of notes in the chord, this finds chords with the specified number of notes. Typically, this is combined with a second filter line where the context variable is set to **Position in Chord (Part)**, for example.

No. of Voices (Part)

If you set **Parameter 2** to the number of voices of the chord, this finds chords with the specified number of voices in the MIDI part or a selection of notes in this part.

Position in Chord (Part)

If you set **Parameter 2** to the position in the chord, this finds chords with the specified chord interval in the MIDI part or a selection of notes in this part.

Note Number in Chord (lowest = 0)

If you set **Parameter 2** to the voicing number of the chord, this finds chords with the specified voicing number in the MIDI part or a selection of notes in this part.

Position in Chord (Chord Track)

If you set **Parameter 2** to the position in the chord, this finds the specified chord interval in the MIDI part or a selection of notes in this part. The chord track is taken as a reference.

Voice

If you set **Parameter 2** to the voice in the chord, this finds the specified voice in the MIDI part or a selection of notes in this part.

Highest in Chord from at Least n Notes

Finds the highest note of the chord in the MIDI part or a selection of notes in this part. Set **Parameter 2** to specify how many notes a chord must contain to be taken into account.

Lowest in Chord from at Least n Notes

Finds the lowest note of the chord in the MIDI part or a selection of notes in this part. Set **Parameter 2** to specify how many notes a chord must contain to be taken into account.

NOTE

The **Musical Context** presets give you an idea of the possibilities of this filter target.

RELATED LINKS
Searching for the Highest/Lowest Notes in Chords on page 1017

Logical Editor Filter Conditions

Depending on the **Filter Target** setting, the following options can be selected in the **Condition** column:

Equal

Has the 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. **Parameter 1** should be the lower value and **Parameter 2** the higher one.

Outside Range

Has a value that is not between the values set up in the **Parameter 1** and **Parameter 2** columns.

Inside Bar Range

Has a value that is within the zone set up in the **Bar Range/Time Base** column, in each bar within the current selection. This is only used if the **Filter Target** is set to **Position**.

Outside Bar Range

Has a value outside the zone set up in the **Bar Range/Time Base** column, in each bar within the current selection. This is only used if the **Filter Target** is set to **Position**.

Before Cursor

Is before the cursor position. This is only used if the **Filter Target** is set to **Position**.

Beyond Cursor

Is after the cursor position **Position** only.

Inside Cycle

Is inside the set cycle. This is only used if the **Filter Target** is set to **Position**.

Outside Cycle

Is outside the set cycle. This is only used if the **Filter Target** is set to **Position**.

Inside Track Loop

Is inside the set track loop. This is only used if the **Filter Target** is set to **Position**.

Exactly Matching Cycle

Exactly matches the set cycle. This is only used if the **Filter Target** is set to **Position**.

Inside Selected Marker

Is inside the selected cycle marker. This is only used if the **Filter Target** is set to **Position**.

Note is Equal to

Is the note specified in the **Parameter 1** column only, regardless of the octave. For example, it allows you to find all C notes, in all octaves. This is only available if the **Filter Target** is set to **Subtype**, that is, **Pitch**.

All Types

All event types.

Property is Set

The property specified in the **Parameter 1** column is set.

Property is Not Set

The property specified in the **Parameter 1** column is not set.

Every other Event

Every **x** event, where **x** is the value specified in the **Parameter 2** column. This is only used if the **Filter Target** is set to **Last Event**, and **Parameter 1** is set to **Event Counter**.

NOTE

The conditions for the **Property** filter target are different.

RELATED LINKS
Setting up Logical Editor Filter Lines on page 1015

Setting up Logical Editor Filter Lines

PREREQUISITE

You have selected a MIDI part in your project and selected **MIDI** > **Logical Editor** > **Setup** to open the **Logical Editor**.

PROCEDURE

1. In the **Event Target Filters** section, click **Insert**.
   A filter line is added to the list.
2. Click in the **Filter Target** column, and select an option from the pop-up menu.
3. Click in the **Condition** column, and select an option from the pop-up menu.
4. Click in the **Parameter 1** column, and enter a value.

   NOTE

   Some **Condition** options also require a value for **Parameter 2**.

RELATED LINKS
Logical Editor Filter Targets on page 1010
Logical Editor Filter Conditions on page 1013
Logical Editor Functions on page 1018
Setting up Logical Editor Actions on page 1022

Searching for Chords

You can search for chords in a MIDI part or on the chord track.

PREREQUISITE

NOTE

A note belongs to a chord if at least 2 other notes play at the same time.

PROCEDURE

1. Open the **Filter Target** pop-up menu, and select **Context Variable**.
2. Open the **Parameter 1** pop-up menu, and select the property that you want to search for.
3. Open the **Condition** pop-up menu, and select an option.

Setting up Multiple Logical Editor Filter Lines

You can add multiple filter lines and combine them by using boolean **And** and **Or** operators and brackets.

PREREQUISITE

You have selected a MIDI part in your project and selected **MIDI** > **Logical Editor** > **Setup** to open the **Logical Editor**.

PROCEDURE

1. In the **Event Target Filters** section, click **Insert**.
   A filter line is added to the list.
2. Click in the **Filter Target** column, and select an option from the pop-up menu.
3. Click in the **Condition** column, and select an option from the pop-up menu.
4. Click in the **Parameter 1** column, and enter a value.
5. In the **Event Target Filters** section, click **Insert** to insert another filter line, and set it up.
6. Click the **Bool** column of the first filter line, and do one of the following:
   - Activate **And** if you want both filter lines to be fulfilled for an element to be found.
   - Activate **Or** if you want at least one of the filter lines to be fulfilled for an element to be found.

RELATED LINKS
Logical Editor Filter Targets on page 1010
Logical Editor Filter Conditions on page 1013
Logical Editor Functions on page 1018
Setting up Logical Editor Actions on page 1022

Searching for Note Pitches or Velocities

PROCEDURE

1. In the **Event Target Filters** section, click **Insert**.
2. Open the **Filter Target** pop-up menu, and do one of the following:
   - To search for specific pitches, select **Subtype**, and in the **Parameter 1** column, enter a pitch, either as a note name, such as C3, D#4, etc., or as a MIDI note number from 0 to 127.

     NOTE

     To find all notes of a specific key in all octaves, open the **Condition** pop-up menu, and select **Note is Equal to**.
   - To search for specific velocities, select **Main Value**.
3. Click **Insert** to add another condition line.
   Parameter 1 is automatically set to **Note**. In addition to this, **Subtype** and **Main Value** are displayed as **Pitch** and **Velocity**, respectively.

Searching for Note Lengths

You can search for notes of specific lengths.

PROCEDURE

1. Open the **Filter Target** pop-up menu, and select **Length**.
   This allows you to find notes of a specific length only.

NOTE

The **Length** parameter is interpreted via the time base setting in the **Bar Range/Time Base** column, that is, in PPQ, seconds, samples, or frames.

2. Open the **Parameter 1** pop-up menu, and set the length that you want to search for.
3. Open the **Condition** pop-up menu, and select an option.

   If you select **Inside Range** or **Outside Range**, use **Parameter 1** and **Parameter 2** to set the start and the end of the range.
4. Click **Insert** to add another condition line.

   Parameter 1 is automatically set to **Note** because the **Length Filter Target** is only valid for notes.

Searching for the Highest/Lowest Notes in Chords

You can search for the highest or lowest note in a chord.

PROCEDURE

1. Open the **Filter Target** pop-up menu, and select **Type**.
2. Open the **Condition** pop-up menu, and select **Equal**.
3. Open the **Parameter 1** pop-up menu, and select **Note**.
4. Click **Insert** to add another condition line.
5. Open the **Filter Target** pop-up menu, and select **Context Variable**.
6. Open the **Condition** pop-up menu, and select **Bigger or Equal**.
7. Open the **Parameter 1** pop-up menu, and select **Highest in Chord from at Least n Notes** or **Lowest in Chord from at Least n Notes**.
8. Open the **Parameter 2** pop-up menu, and select how many notes a chord must contain to be taken into account.

Brackets

The bracket columns allow you to enclose 2 or more filter lines, dividing the conditional expression into smaller units. This is only relevant when you have 3 or more filter lines and want to use the boolean **Or** operator.

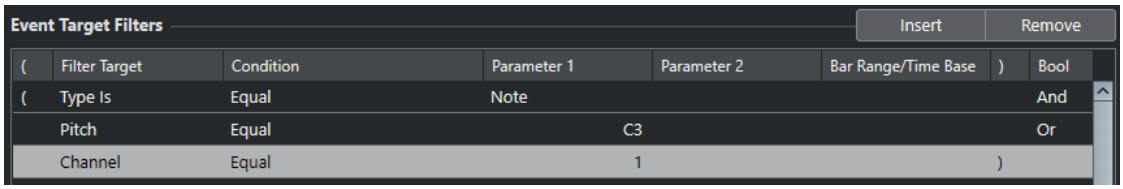
You add brackets by clicking in the bracket columns and selecting an option. You can select up to three brackets.

If you add several layers of brackets, these are evaluated from the inside out, starting with the innermost brackets.

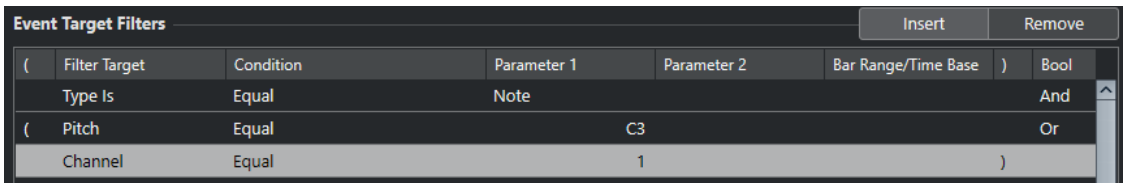
Expressions within brackets are evaluated first.

EXAMPLE

You can find all MIDI notes with the pitch C3, as well as all events set to MIDI channel 1, regardless of their type.



You can find all notes that either have the pitch C3 or the MIDI channel 1, but no non-note events.



Logical Editor Functions

The **Functions** pop-up menu allows you to select the basic type of editing to be performed.

The following functions are available:

Delete

Deletes all found elements.

Transform

Transforms all events that match the **Event Target Filters** according to the **Event Transform Actions**.

Insert

Creates new elements and inserts these into the parts. The new elements are based on the elements found by the filter conditions, but with any changes you have set up in the action list applied.

This means 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

Transforms the elements found, based on the action list. All elements that do not meet the filter conditions are deleted.

Copy

Copies all found elements, transforms them according to the action list, and pastes them into a new part on a new MIDI track. The original events are not affected.

Extract to Track

Transforms all found events and moves them to a new part on a new MIDI track.

Select

Selects all found events and highlights them for further work in the regular MIDI editors.

Extract to Lanes

Transforms all found events and moves them to a new part on a new lane.

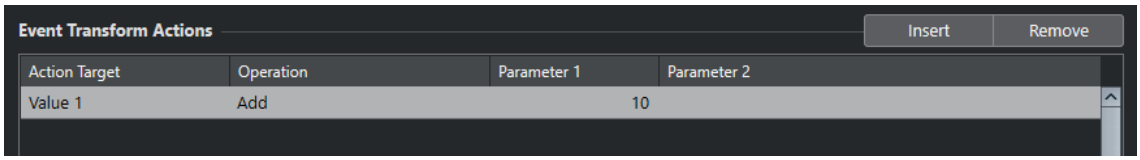
Deselect

Deselects all selected events.

RELATED LINKS
Setting up Logical Editor Actions on page 1022

Logical Editor Action Settings

Action Targets in the **Event Transform Actions** section allow you to select the property that is changed in the events. Actions are only available if you set the functions pop-up menu to **Transform**.



To set up an action, make the following settings:

Action Target

Sets the property that is changed in the events.

Operation

Determines what to do with the **Action Target**.

Parameter 1

Sets a value for the **Action Target**.

Parameter 2

Only available for **Operations** that define a range.

RELATED LINKS
Logical Editor Functions on page 1018
Logical Editor Filter Settings on page 1008

Logical Editor Action Targets

Action Targets in the **Event Transform Actions** section allow you to select the property that is changed in the events. Actions are only available if you set the functions pop-up menu to **Transform**.

Position

Moves the found events.

Length

Resizes note events.

Subtype

Adjusts **Subtype** in the events. What is displayed depends on the event type. For notes, **Subtype** is the pitch.

Main Value

Adjusts **Main Value** in the events. What is displayed depends on the event type. For notes, **Main Value** is the velocity value.

Channel

Allows you to change the MIDI channel setting.

Type

Allows you to change the event type, that is, transform aftertouch events to modulation events, or pitchbend events to VST 3 tuning events.

Secondary Value

Adjusts **Secondary Value** in the events, which is used for note-off velocity when searching for properties.

NoteExp Operation

Allows you to specify a note expression operation in the **Operation** column.

VST 3 Value Operation

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.

Logical Editor Operations

The **Operation** column allows you to determine what to do with the **Action Target**.

The available operations depend on the selected **Action Target**. The following options are available:

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** with the value specified in the **Parameter 1** column.

Divide by

Divides the **Action Target** by the value specified in the **Parameter 1** column.

Round by

Rounds the **Action Target** value using the value specified in the **Parameter 1** column.

Set Random Values Between

Sets the **Action Target** value to a random value within the range specified by **Parameter 1** and **Parameter 2**. Note that these can be set to negative values.

Set to Fixed Value

Sets the **Action Target** to the value specified in the **Parameter 1** column.

Set Relative Random Values Between

Adds a random value to the current **Action Target** value. The added random value is within the range specified by **Parameter 1** and **Parameter 2**. These can be set to negative values.

Use Subtype

This is only available if you set **Action Target** to **Main Value**. If this option is selected, the **Subtype** setting in each event is copied to the **Main Value** setting.

Use Main Value

This is only available if you set **Action Target** to **Subtype**. If this option is selected, the **Main Value** setting in each event is copied to the **Subtype** setting.

Mirror

This is only available if you set **Action Target** to **Subtype** or **Main Value**. When this option is selected, the values are mirrored around the value set in the **Parameter 1** column.

For notes, this inverts the scale, with the key set in the **Parameter 1** column as the center point.

Invert

Inverts note expression data containing the specified VST 3 event parameter.

Add Length

This is only available if you set **Action Target** to **Position**. Furthermore, it is only valid if the found events are notes. If you select **Add Length**, the length of each note event is added to the **Position** value.

Linear Change in Loop Range

This affects events between the left and right locators only. It creates a linear ramp of values starting at the value in the **Parameter 1** column and ending at the **Parameter 2** value, replacing the original values.

Relative Change in Loop Range

This creates a ramp of values, affecting events in the loop range only, that is, between the locators. However, the changes are relative, meaning that values are added to the existing values.

You set up a value ramp starting at **Parameter 1** and ending at **Parameter 2**. These 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.

Remove NoteExp

This option is only available for notes. It allows you to remove all note expression data from a note.

Create One Shot

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.

Reverse

Reverses the note expression data.

Move to Cursor

Moves the event start to the cursor position.

Transpose to Scale

This is only available if you set **Action Target** to **Subtype** and if the filter conditions are specifically set up to find notes, that is, if you added the **Type = Note** filter condition line. When **Transpose to Scale** is selected, you can specify a musical scale using the **Parameter 1** and **Parameter 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 is transposed to the closest note in the selected scale.

RELATED LINKS
Subtype, Main Value, and Secondary Value on page 1011

Setting up Logical Editor Actions

You can set up actions, that is, changes that are made to the found events. Actions are not relevant for the **Functions Select** and **Delete**.

PREREQUISITE

You have set up at least one filter line in the **Event Target Filters** section. You have set the functions pop-up menu to **Transform**.

PROCEDURE

1. In the **Event Transform Actions** section, click **Insert**.

   An action line is added to the list.
2. Click in the **Action Target** column, and select an option from the pop-up menu.
3. Click in the **Operation** column, and select an option from the pop-up menu.
4. Click in the **Parameter 1** column, and enter a value.

   NOTE

   Some **Operation** options also require a value for **Parameter 2**.
5. Click **Apply** to apply the defined actions.

RELATED LINKS

Setting up Logical Editor Filter Lines on page 1015
Logical Editor Functions on page 1018
Logical Editor Action Targets on page 1019
Logical Editor Operations on page 1020

Editing Tempo and Time Signature

You can set up a tempo and time signature for your project. By default, the tempo is set to 120 BPM, and the time signature to 4/4.

Project Tempo Modes

For any 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 at the cursor. If your project does not contain any tempo changes, the tempo is changed at the project start.

RELATED LINKS

Projects in Fixed Tempo Mode on page 1030
Projects with Tempo Changes on page 1028

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 **Switch 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.

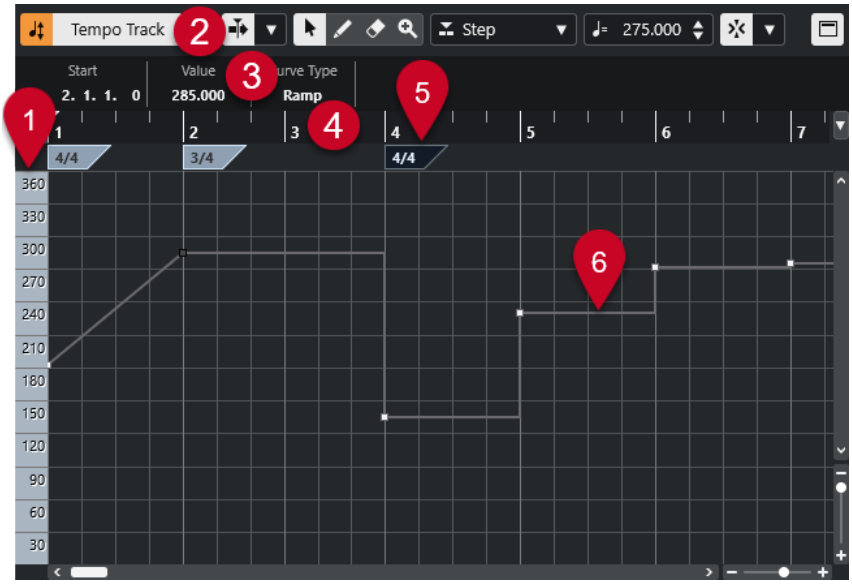
RELATED LINKS
Basics Section for Instrument Tracks on page 135
Basics Section for MIDI Tracks on page 137
Basics Section for Audio Tracks on page 132

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**, do one of the following:

- Select **Project** > **Tempo Track**.
- 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 are shown.

If your project is set to tempo track mode, the curve display shows the tempo curve with the tempo events in the project.

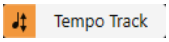
Tempo Track Editor Toolbar

The toolbar contains tools for selecting, adding, and changing tempo and time signature events.

The following tools are available:

Activate Tempo Track

Activate Tempo Track



Switches the project tempo between fixed tempo mode and tempo track mode.

Left Divider

Left Divider

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

Auto-Scroll

Auto-Scroll

Keeps the project cursor visible during playback.

Select Auto-Scroll Settings

Allows you to activate **Page Scroll** or **Stationary Cursor** and to activate **Suspend Auto-Scroll When Editing**.

Tool Buttons

Object Selection

Selects events.

Draw

Draws events.

Erase

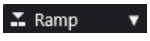
Deletes events.

Zoom

Zoom in. Hold **Alt/Opt**, and click to zoom out.

New Tempo Type

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 **Step** if you want new tempo points to change instantly.

Select **Automatic** if you want new tempo points to be of the same type as the previous curve point.

Current Tempo

Current Tempo

In fixed tempo mode, this allows you to change the current tempo.

Snap

Snap On/Off

Restricts horizontal movement and positioning to the positions specified by the **Snap Type**. Time signature events always snap to the beginning of bars.

Snap Type

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

Right Divider

Right Divider

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

Show Info Line

Show/Hide Info

Opens/Closes the info line.

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.

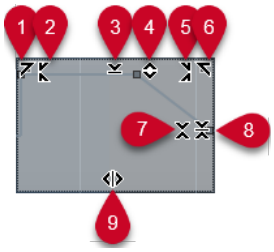
RELATED LINKS
Tempo Track Inspector on page 142
Tempo Track Controls on page 124

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/Opt**-click in the upper left corner of the editor, you can compress or expand 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/Opt**-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/Opt**-click in the center of the right border 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 center of the 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.

Projects with Tempo Changes

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 obtain confusing results.

If you activate **Activate Tempo Track** on 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 adding tempo events by tapping.
- By adding tempo events on the tempo track.

RELATED LINKS
Project Tempo Modes on page 1023
Editing Tempo Events in the Tempo Track Editor on page 1029
Setting up Tempo Changes by Tapping on page 1030

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**.

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 1023
Tempo Track Controls on page 124
Tempo Track Editor on page 1024
Setting up Tempo Changes by Tapping on page 1030

Adding Tempo Changes to the Tempo Track

PROCEDURE

1. Select **Project** > **Add Track** > **Tempo**.
   The tempo track is added to the track list.
2. On the tempo track, 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, and click and draw 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.

Editing Tempo Events in the Tempo Track Editor

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 obtain 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.

Setting up Tempo Changes by Tapping

You can insert tempo changes into your project by tapping to the tempo of a recording or a live beat.

PROCEDURE

1. Select **Project** > **Add Track** > **Tempo** to add the tempo track to your project.
2. In the **Tempo & Time Signature** section of the **Transport** panel or the **Transport Bar**, activate **Tempo Track**.

   This sets the tempo mode to **Tempo Track** mode.
3. Open the **Tap Tempo Mode** pop-up menu, and select a mode.

   The **Tap Tempo Mode** defines where new tempo events are inserted when you insert tempo changes by tapping.
4. In the **Tempo & Time Signature** section, keep clicking **Tap** to the tempo of the recording or the live beat.

   A message informs you that you are in **Tap Tempo** mode and indicates where the tempo events are inserted. The tempo is updated as you keep tapping.

   NOTE

   You can also assign a key command for the **Tap Tempo** function via the **Key Commands** dialog in the **Transport** category.
5. Stop clicking **Tap** to confirm the set tempo.

RESULT

A new tempo event that is set to the tapped tempo is inserted into your project.

RELATED LINKS

Setting up Projects for Tempo Changes on page 1028
Tap Tempo Modes on page 1032

Projects in Fixed Tempo Mode

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:

- **Tap Tempo**
- **Set Project Tempo from Loop**

RELATED LINKS

Project Tempo Modes on page 1023

Setting the Project Tempo by Tapping on page 1031
Setting the Project Tempo from an Audio Loop on page 1031

Setting the Project Tempo by Tapping

You can set the project tempo by tapping to the tempo of a recording or a live beat.

PROCEDURE

1. Optional: To tap to the tempo of a recording in the **Project** window, click **Start** on the **Transport** panel or the **Transport Bar**.

   You can also tap the tempo in **Stop** mode. This is useful if you want to tap to the beat of a sound source outside of the **Project** window.

2. In the **Tempo & Time Signature** section of the **Transport** panel or the **Transport Bar**, open the **Tap Tempo Mode** pop-up menu, and activate **Set project tempo**.

   NOTE

   If **Tempo Track** is deactivated on the **Transport** panel or the **Transport Bar**, you can also use the **Automatic** mode to set the project tempo.

3. Keep clicking **Tap** to the tempo of the recording or the live beat.

   A message informs you that you are in **Tap Tempo** mode and that you are setting the project tempo. The tempo is updated as you keep tapping.

   NOTE

   You can also assign a key command for the **Tap Tempo** function via the **Key Commands** dialog in the **Transport** category.

4. Stop clicking **Tap** to confirm the tempo.
5. Optional: Click **Start** to deactivate playback.

RESULT

The project tempo is set to the tapped tempo.

RELATED LINKS

Tap Tempo Modes on page 1032
Projects in Fixed Tempo Mode on page 1030

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 the end of the audio loop, but its number of bars.

3. Select the audio loop.

4. Select **Audio** > **Advanced** > **Set Tempo from Event**.
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.

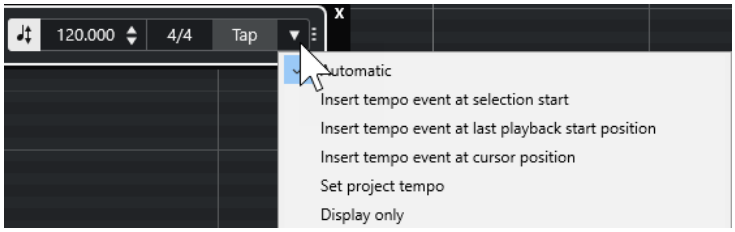
RELATED LINKS

Projects in Fixed Tempo Mode on page 1030

Tap Tempo Modes

When you insert tempo changes into your project by tapping, you can set up a **Tap Tempo Mode**. This mode defines where new tempo events are inserted.

- To open the **Tap Tempo Mode** pop-up menu, open the **Tempo & Time Signature** section of the **Transport** panel, and click **Tap Tempo Mode**.



The following modes are available:

Automatic

Depending on the selection, the following happens:

- If a part, an event, or a range is selected, a new tempo event is inserted at the start of a selection.
- If nothing is selected and **Start** is activated on the **Transport** panel or the **Transport Bar**, a new tempo event is inserted at the last playback start position.
- If nothing is selected and **Stop** is activated on the **Transport** panel or the **Transport Bar**, a new tempo event is added at the project cursor position.
- If **Tempo Track** is deactivated on the **Transport** panel or the **Transport Bar**, the project tempo is set.

Insert tempo event at selection start

Inserts a tempo event at the start of the current selection. If nothing is selected, no tempo event is inserted.

Insert tempo event at last playback start position

Inserts a tempo event at the last playback start position.

Insert tempo event at cursor position

Inserts a tempo event at the cursor position.

Set project tempo

If **Tempo Track** mode is activated, this changes the initial tempo event of the tempo track. If **Tempo Track** mode is deactivated, this sets the project tempo.

Display only

Displays the tapped tempo in an informer without applying any changes.

NOTE

By default, the **Tap Tempo Mode** is set to **Automatic**.

RELATED LINKS

Setting up Tempo Changes by Tapping on page 1030
Transport Panel Sections on page 224
Transport Bar Sections on page 235

Copying Warp Markers to Other Events

You can copy warp markers from a selected event to other events in your project.

PREREQUISITE

You have selected an event that contains warp markers that you want to copy to other events at the same time position.

PROCEDURE

1. Select **Audio** > **Advanced** > **Copy Warp Markers from Selected Event**.
2. Select one or multiple events at the same time position as the destination.
3. Select **Audio** > **Advanced** > **Paste Warp Markers to Selected Events**.

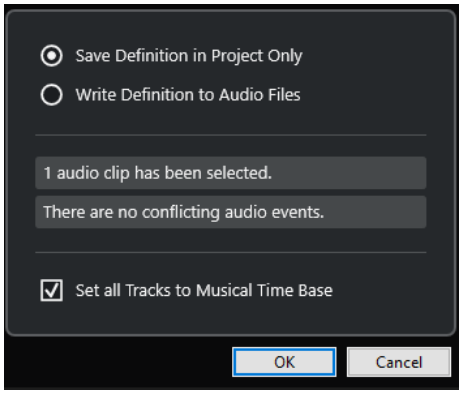
RESULT

Warp markers on the source event are added to the destination events at the same time positions. Existing warp markers on the destination events are preserved.

Set Definition from Tempo Dialog

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

Saves the tempo information in the project file only.

Write Definition to Audio Files

Writes the tempo information to the selected audio files. This is useful if you want to use them in other projects in conjunction with the tempo information.

Set all Tracks to Musical Time Base

Sets 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.

Time Signature Events

You can set up one or more time signatures for a project.

You can set up the first time signature event of your project on the **Transport** panel. You can add further time signature events in the **Tempo Track Editor**.

Time signature events can have click patterns assigned. These allow you to create different grooves and feels for the metronome click. You can create a triplet click pattern for a 4/4 time signature, for example.

RELATED LINKS
Project Window Toolbar on page 38
Transport Bar on page 52
Signature Track on page 125
Adding Time Signature Events in the Tempo Track Editor on page 1034
Setting up a Click Pattern for a Time Signature Event on page 1035

Adding Time Signature Events in the Tempo Track Editor

PROCEDURE

1. Select **Project** > **Tempo Track** to open the **Tempo Track Editor**.
2. Select **Draw** on the toolbar, and in the time signature display, click at the time position where you want to insert the time signature event.
3. Edit the numerator and the denominator to change the value of the time signature event.

NOTE

You can also select the time signature event and edit the time signature value on the info line.

RESULT

The time signature event is added at the specified time position. The timeline and the event displays for the **Project** window and the editors reflect the changes.

Adding Time Signature Events on the Signature Track

You can add multiple time signature events for a project. This is useful if you want to change the time signature at a specific bar, for example.

PROCEDURE

1. Select **Project** > **Add Track** > **Signature**.

   The time signature track is added to the track list.
2. Select **Draw** on the **Project** window toolbar and on the signature track, click at the time position where you want to insert the time signature event.
3. Edit the numerator and the denominator to change the value of the time signature event.

RESULT

The time signature event is added at the specified time position. The timeline and the event displays for the **Project** window and the editors reflect the changes.

RELATED LINKS

Signature Track on page 125

Setting up a Click Pattern for a Time Signature Event

For each signature event in your project, you can set up a metronome click pattern.

PROCEDURE

1. Double-click the plus sign to open the **Click Pattern Editor**.
2. Do one of the following:
   - Select one of the patterns that are available for the current time signature in the **Pattern** pop-up menu.
   - Set up a new user pattern by changing the number of clicks in the **Clicks** value field. You can also change the accent level for a beat by changing its vertical position in the event display.
3. When you are done, click outside the **Click Pattern Editor** to close it.
4. Repeat this for each signature event for which you want to set up a click pattern.

RESULT

If you play back the project and activate the metronome click, the different project parts use the defined click patterns. The **Click Pattern Editor** in the **Transport Bar** shows the pattern at the project cursor position.

RELATED LINKS
Click Pattern Editor on page 250

Rendering Audio and MIDI

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

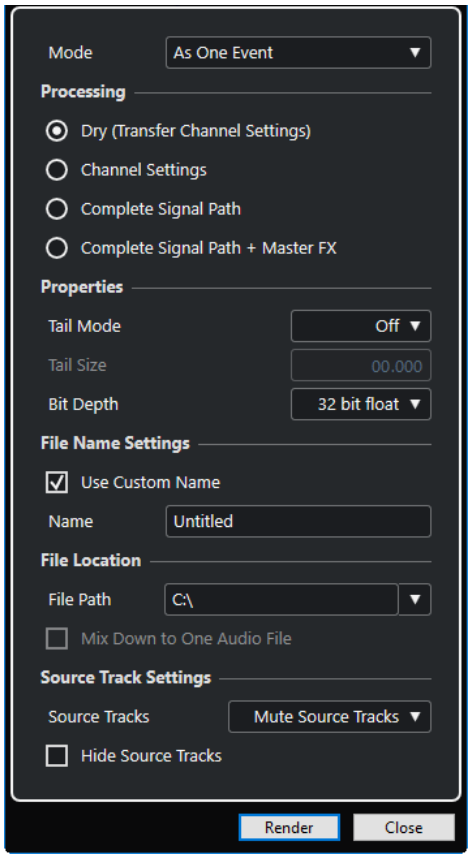
IMPORTANT

The rendering function does not support side-chain routing.

Render Tracks Dialog

The **Render Tracks** dialog allows you to customize the track render settings.

- To open the **Render Tracks** dialog, deselect all events in the **Project** window, and select one or more audio tracks, instrument tracks, or MIDI tracks. Select **Edit** > **Render in Place** > **Render Settings**.



The following settings are available in the **Mode** section:

As Separate Events

Creates one or more tracks that contain separate events or parts that are saved as separate audio files.

As Block Events

Creates one or more tracks that contain adjacent events/parts that are combined so that they become blocks. Every block is saved as a separate audio file.

As One Event

Creates one or more tracks that contain the events/parts and combines them so that they become one event/part. Every combination is saved as a separate audio file.

The following settings are available in the **Processing** section:

Dry

Copies all effects and panner settings to new audio tracks. The resulting audio tracks keep the formats of their source tracks. A mono track results in a mono track, for example.

Channel Settings

Renders all effects into the resulting audio files. This includes insert effects, channel strip settings, group channel settings, and FX send channel settings. Panner settings are transferred to the new audio tracks. The resulting audio tracks keep the formats of their source tracks. A mono track results in a mono track, for example.

Complete Signal Path

Renders the complete signal path 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. 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 a stereo audio file.

Complete Signal Path + Master FX

Renders the complete signal path and the master bus settings into the resulting audio files. This includes all channel settings, group channel settings, FX send channel settings, and panner settings. 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 a stereo audio file.

The following settings are available in the **Properties** section:

Tail Mode

Allows you to set the tail mode to **Bars & Beats**, **Seconds** or **Off**.

Tail Size

Allows you to set a tail length 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 Depth

Allows you to set the bit depth for the resulting file.

The following settings are available in the **File Name Settings** section:

Use Custom Name

Activates the use of custom names for the rendered files.

Name

Allows you to enter a custom name for the rendered files.

The following settings are available in the **File Location** section:

File Path

Allows you to select a custom folder to which the resulting `.wav` files are rendered.

Mix down to One Audio File

Creates one audio file from all of your source material. This option is only available if several tracks are selected and **Dry (Transfer Channel Settings)** is deactivated.

The following settings are available in the **Source Track Settings** section:

Source Tracks

- **Keep Source Tracks Unchanged**

  Keeps the source tracks unchanged.
- **Mute Source Tracks**

  Automatically mutes the source tracks.
- **Disable Source Tracks**

  Disables the source tracks. This option releases CPU and RAM resources and is therefore similar to the **Freeze** function. To reenable the tracks, right-click the disabled tracks to open the context menu, and select **Enable Selected Tracks**.
- **Remove Source Tracks**

  Removes the source tracks from the track list.

Hide Source Tracks

Hides the source tracks 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
Pan Control on page 365

Rendering Tracks

You can render selected tracks either via the **Render Tracks** dialog or by using the **Render (with Current Settings)** command.

PROCEDURE

1. Deselect all events.
2. Select one or more audio, MIDI, or instrument tracks.
3. Select **Edit** > **Render in Place** > **Render Settings**.
4. Specify the render options.
5. 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.

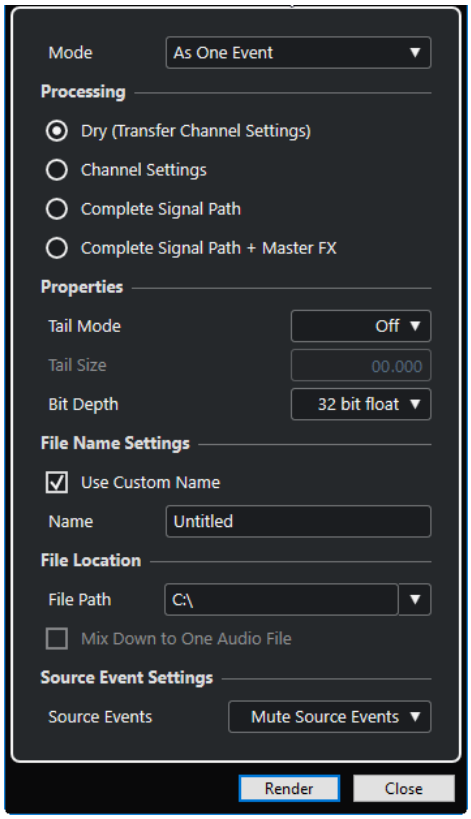
NOTE

You can also start the rendering operation by selecting **Edit** > **Render in Place** > **Render (with Current Settings)**.

Render Selection Dialog

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.

- To open the **Render Selection** dialog, select a range, and select **Edit** > **Render in Place** > **Render Settings**.



The following settings are available in the **Mode** section:

As Separate Events

Creates one or more tracks that contain separate events or parts that are saved as separate audio files.

As Block Events

Creates one or more tracks that contain adjacent events/parts that are combined so that they become blocks. Every block is saved as a separate audio file.

As One Event

Creates one or more tracks that contain the events/parts and combines them so that they become one event/part. Every combination is saved as a separate audio file.

The following settings are available in the **Processing** section:

Dry

Copies all effects and panner settings to new audio tracks. The resulting audio tracks keep the formats of their source tracks. A mono track results in a mono track, for example.

Channel Settings

Renders all effects into the resulting audio files. This includes insert effects, channel strip settings, group channel settings, and FX send channel settings. Panner settings are transferred to the new audio tracks. The resulting audio tracks keep the formats of their source tracks. A mono track results in a mono track, for example.

Complete Signal Path

Renders the complete signal path 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. 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 a stereo audio file.

Complete Signal Path + Master FX

Renders the complete signal path and the master bus settings into the resulting audio files. This includes all channel settings, group channel settings, FX send channel settings, and panner settings. 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 a stereo audio file.

The following settings are available in the **Properties** section:

Tail Mode

Allows you to set the tail mode to **Bars & Beats**, **Seconds** or **Off**.

Tail Size

Allows you to set a tail length 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 Depth

Allows you to set the bit depth for the resulting file.

The following settings are available in the **File Name Settings** section:

Use Custom Name

Activates the use of custom names for the rendered files.

Name

Allows you to enter a custom name for the rendered files.

The following settings are available in the **File Location** section:

File Path

Allows you to select a custom folder to which the resulting `.wav` files are rendered.

Mix down to One Audio File

Creates one audio file from all of your source material. This option is only available if several tracks are selected and **Dry (Transfer Channel Settings)** is deactivated.

The following settings are available in the **Source Event Settings** section:

Source Events

- **Keep Source Events Unchanged**

  Keeps the source events unchanged.
- **Mute Source Events**

  Automatically mutes the source events.

Rendering Selections

You can render selections or range 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.

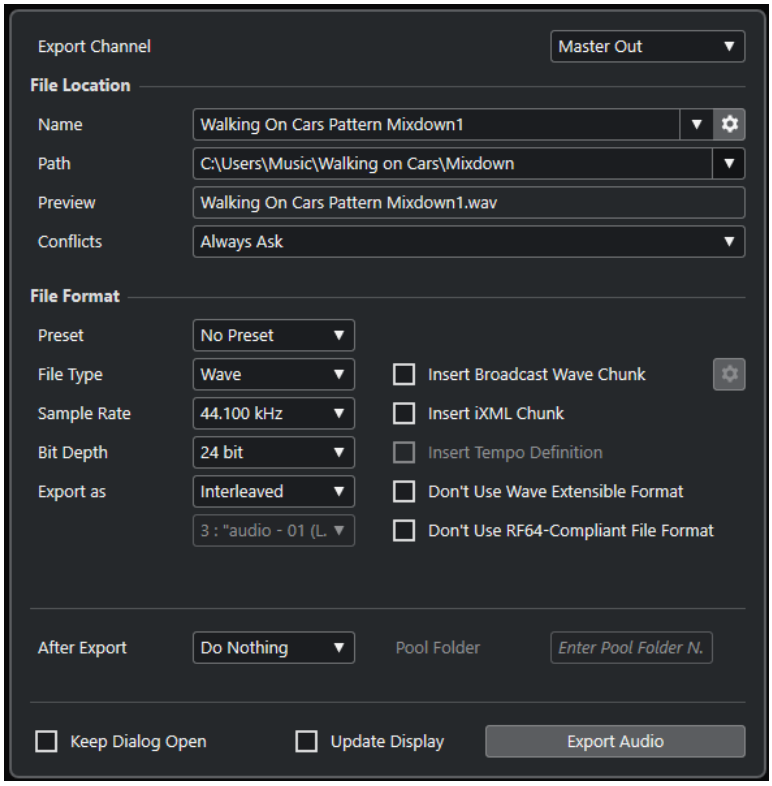
NOTE

You can also start the rendering operation by selecting **Edit** > **Render in Place** > **Render (with Current Settings)**.

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.

- To open the **Export Audio Mixdown** dialog, select **File** > **Export** > **Audio Mixdown**.

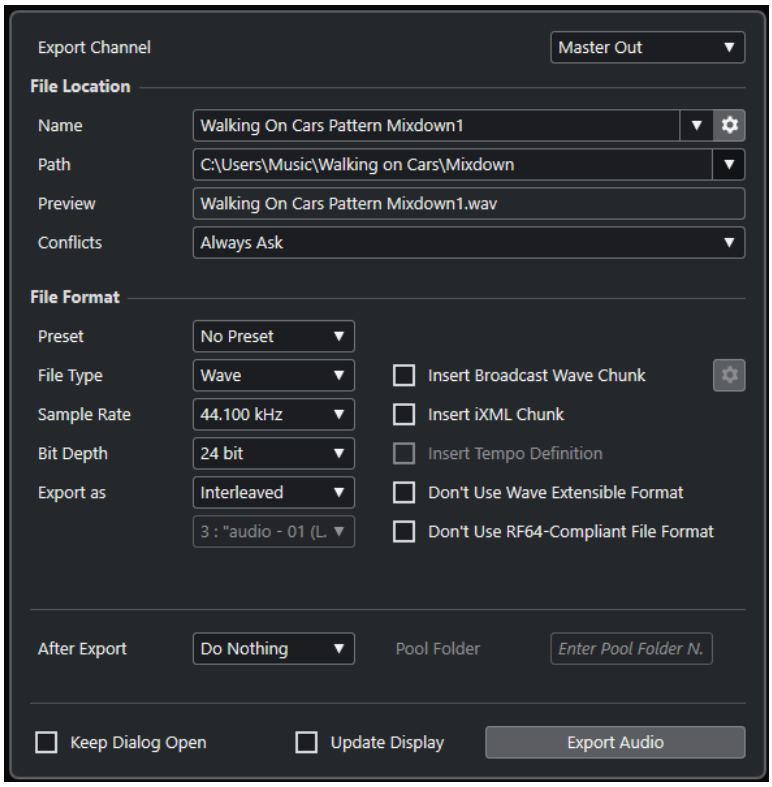


Export Audio Mixdown Dialog

The **Export Audio Mixdown** dialog allows you to set up how audio is mixed down and exported.

- To open the **Export Audio Mixdown** dialog, select **File** > **Export** > **Audio Mixdown**.

The **Export Audio Mixdown** dialog is divided into several sections.



Export Channel

In the **Export Channel** pop-up menu, you can select a channel for export.

File Location

In the **File Location** section, the following options are available:

Name

Allows you to specify the name of the mixdown file.

Click **File Name Options** to open 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.

Click **Set up Naming Scheme** to open a dialog where you can specify a naming scheme.

Path

Allows you to specify the file path for the mixdown file.

Click **Path Options** to open a pop-up menu with file path 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.
- **Project Mixdown Folder** sets the path to the **Mixdown** folder of your project.

  NOTE

  If you activate **Project Mixdown Folder**, the option **Use Project Audio Folder** is automatically disabled.

The **Mixdown** folder is automatically created in your project folder. It is used by default if no export path information is available, that is, if you create a new empty project, or if you load or create a project from a template.

- **Recent Paths** allows you to select recently selected file locations.

  The **Mixdown** folder is not added to the list of **Recent Paths**.
- **Clear Recent Paths** allows you to delete all recently selected file locations.

Preview

Shows the file name with the naming scheme applied.

Conflicts

Exporting audio can cause naming conflicts with existing files that have the same name. You can define how file name conflicts are resolved:

- **Always Ask** opens a warning that allows you to choose whether to overwrite an existing file or to create a new unique file name 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

In the **File Format** section, the following options are available:

Preset

Allows you to save presets for file format settings.

- **No Preset** allows you to export your file without applying a file format preset.
- **Preset list** allows you to select a saved file format preset from the list.
- **Save Preset** allows you to save the current file format settings as a preset.
- **Remove Preset** allows you to remove the selected preset.
- **Rename Preset** opens a dialog where you can rename the selected preset.

File Type

Allows you to select a file type for the mixdown file.

Sample Rate

Sets the sample rate for the mixdown file.

NOTE

- Wave, AIFF files only: 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, because this is the sample rate used on audio CDs.

Bit Depth (Wave, AIFF, FLAC)

Allows you to select a bit depth for the mixdown file.

Bit Rate (MPEG 1 Layer 3)

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.

Export as

Allows you to select a channel mode for the mixdown file:

- **Interleaved**

  Allows you to export to an interleaved file.

- **Split Channels**

  Allows you to export the 2 channels of a stereo bus as separate mono files.

- **Mono Downmix**

  Allows you to downmix the 2 channels of a stereo bus to a single mono file.

  For stereo, the **Stereo Pan Law**, as defined in the **Project Setup** dialog, is applied to avoid clipping.

Insert Broadcast Wave Chunk (Wave, AIFF)

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 encounter problems using the file in another application, deactivate **Insert Broadcast Wave Chunk**, and export the file again.

Set up Broadcast Wave Chunk (Wave, AIFF)

Opens the **Broadcast Wave Chunk** dialog where you can enter information.

Don’t Use Wave Extensible Format (Wave)

Deactivates the Wave Extensible format that contains additional metadata, such as the speaker configuration.

Don’t Use RF64-Compliant File Format (Wave)

Deactivates the RF64-compliant format that allows file sizes to exceed 4 GB.

Insert iXML Chunk (Wave, AIFF)

Includes additional project-related metadata, such as project name, author, and project frame rate.

Insert Tempo Definition (Wave, AIFF)

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.

High-Quality Mode (MPEG 1 Layer 3)

Sets the encoder to a different resampling mode. This may deliver better results, depending on your settings. However, it does not allow you to select the **Sample Rate**.

Insert ID3 Tag (MPEG 1 Layer 3)

Includes ID3 Tag information in the exported file.

Edit ID3 Tag (MPEG 1 Layer 3)

Opens the **Setup 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.

Compression Level (FLAC)

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.

Quality (OggVorbis)

Sets the quality for the variable bit rate encoding. This setting determines the range of the bit rate. The higher the value, the higher the sound quality and the larger the files.

After Export

- **Do Nothing** does nothing after export.
- **Open in WaveLab** opens your mixdown file in a WaveLab version after export. This requires that WaveLab is installed on your computer.
- **Create New Project**

  NOTE

  This option is only available for uncompressed file formats, with **Use Project Audio Folder** deactivated.

  Creates 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 corresponding mixdown file is placed on the tracks as audio events. The resulting track names are identical with the export channel names. The new project is the active project.

  Activating this option disables the **Insert to Pool** and **Create Audio Track** options.
- **Create 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.
- **Insert to Pool**

  Imports the resulting audio file automatically back into the **Pool** as a clip. Deactivating this option also deactivates the **Create Audio Track** option.

Pool Folder

Allows you to specify a **Pool** folder for the clip.

General Options

In the bottom section, the following options are available:

Keep Dialog Open

Activate this to keep the dialog open after clicking **Export Audio**.

Update Display

Updates the meters during the export process. This allows you to check for clipping, for example.

Export Audio

Allows you to export your audio as specified.

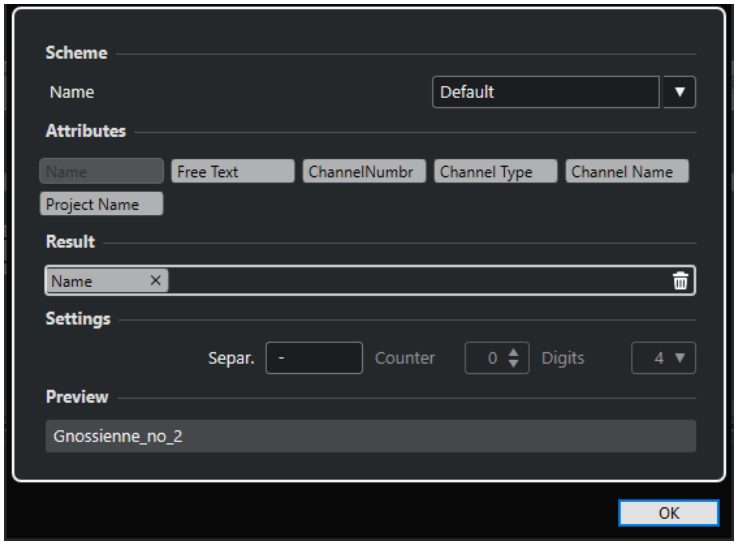
RELATED LINKS
File Formats on page 1051

Naming Scheme Dialog

The **Naming Scheme** dialog allows you to define naming schemes for the file name of 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, open the **Export Audio Mixdown** dialog. In the **File Location** section, to the right of the **Name** field, click **Set up Naming Scheme**.



Scheme

Allows you to save and delete naming schemes.

Attributes

Holds the following naming scheme attributes:

- **Name**

  Adds the name to the resulting file name.
- **Free Text**

  Allows you to enter free text.
- **Channel Number**

  Adds the channel number to the resulting file name.
- **Channel Type**

  Adds the channel type to the resulting file name.
- **Channel Name**

  Adds the channel name to the resulting file name.
- **Project Name**

  Adds the project name to the resulting file name.

Result

Allows you to drop attributes for the file name and to rearrange them by dragging.

Settings

Allows you to select separator and counter settings.

- **Separator**

  Divides attributes from each other.

Preview

Displays a preview of your current settings.

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.

PROCEDURE

1. In the **Naming Scheme** dialog, drag up to 5 attributes into the **Result** section.

   You can also double-click an attribute to add it to the **Result** section.

2. Optional: In the **Settings** section, double-click the **Separator** text field to change the separator.

   The **Preview** section displays the file name scheme according to your settings.

3. Optional: Click the **Name** value field in the **Scheme** section and enter a preset name. Press **Return** to save your settings as a preset.

   NOTE

   The preset is only available for the channels that are selected in the **Channel Selection** section.

4. Click **OK**.

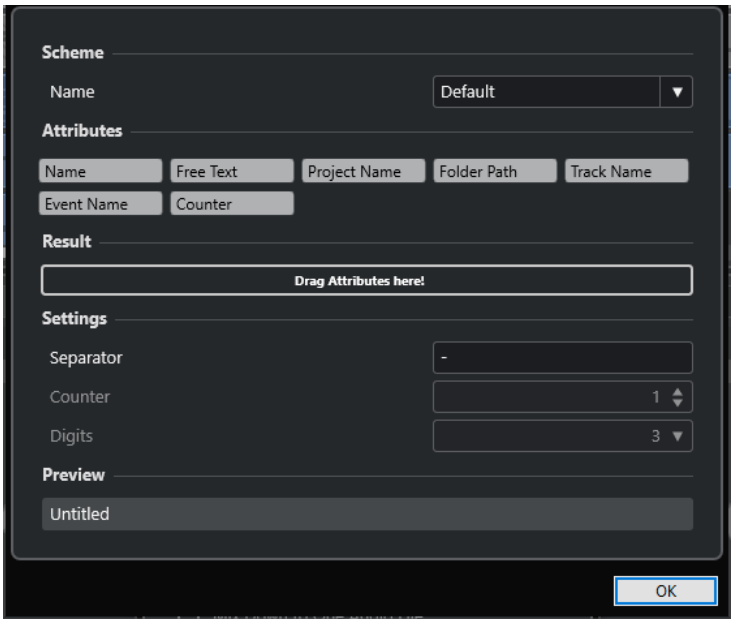
Entering Free Text

You can enter free text that is added to the file name of the exported audio files.

PROCEDURE

1. In the **File Location** section of the **Export Audio Mixdown** dialog, click **Set up Naming Scheme**.

   The **Naming Scheme** dialog opens.



2. Open the **Scheme** pop-up menu, and select **New Scheme**.

3. Double-click the **Free Text** attribute to add it to the **Result** field.
4. In the **Result** field, double-click the **Free Text** label, and enter the text that you want to add.
5. Press **Return** to confirm your changes.
6. Click **OK**.

RESULT

The text that you entered is added to the file name scheme and applied on export.

Mixing Down to Audio Files

You can mix selected channels down to audio files.

PREREQUISITE

- You have set up the left and right locators so that they encompass the range that you want to mix down.
- You have 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.

  IMPORTANT

  The setting of the **Output Routing** in the corresponding track **Inspector** determines the channel width of the **Export Audio Mixdown** export. This means that if no main output bus is selected, the exported audio file only contains silence.

PROCEDURE

1. Select **File** > **Export** > **Audio Mixdown**.
2. In the **File Location** section, set up a valid export path.
3. Set up the file name.

   NOTE

   You can define a naming scheme in the **Naming Scheme** dialog.
4. In the **File Format** section, set up the settings according to your needs.
5. Click **Export Audio**.

RESULT

The audio is exported.

File Formats

The **File Type** pop-up menu in the **File Format** section allows you to select a format and make additional settings for the mixdown file.

Wave file

This is the most common file format on the PC platform. Wave files have the extension **.wav**.

AIFF file

This is an audio file format standard defined by Apple Inc. AIFF files are used on most computer platforms. The files can contain embedded text strings. AIFF files have the extension **.aif**.

MPEG 1 Layer 3 file

This is a family of standards used for encoding audio-visual information, such as movies, video, and music in a digital compressed format. Cubase can read MPEG Layer 2 and MPEG Layer 3. MP3 files are highly compressed files that still provide good audio quality. The file extension is **.mp3**.

FLAC file

This is an open source format that reduces the size of audio files by 50% to 60%, compared to regular Wave files. The file extension is **.flac**.

Ogg Vorbis file

This is an open source, patent-free audio encoding and streaming technology. The Ogg Vorbis encoder uses variable bit rate encoding. It offers small, compressed audio files of comparatively high audio quality. The file extension is**.ogg**.

RELATED LINKS
Wave Files on page 1052
AIFF Files on page 1053
MP3 (MPEG 1 Layer 3) Files on page 1055
FLAC Files on page 1055
Ogg Vorbis Files on page 1056
File Format on page 1046
Saving File Format Presets on page 1057

Wave Files

Wave files have the extension **.wav**. On personal computers, this is the most common file format.

- To open the settings for wave files, select **Wave** in the **File Type** pop-up menu.

Sample Rate

Sets the sample rate for the mixdown file.

NOTE

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, because this is the sample rate used on audio CDs.

Bit Depth

Allows you to select a bit depth for the mixdown file. You can select **8 bit**, **16 bit**, **24 bit**, **32 bit**, **32 bit float**, or **64 bit float**. 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 **Lin Dither**dithering plug-in reduces the effects of quantization noise and artifacts when converting the audio to 16 bit. A resolution of 8 bit results in limited audio quality and should only be used in cases where it is unavoidable or explicitly required.

Export as

Allows you to select a channel mode for the mixdown file:

- **Interleaved**

  Allows you to export to an interleaved file.

- **Split Channels**

  Allows you to export the 2 channels of a stereo bus as separate mono files.

- **Mono Downmix**

  Allows you to downmix the 2 channels of a stereo bus to a single mono file.

  For stereo, the **Stereo Pan Law**, as defined in the **Project Setup** dialog, is applied to avoid clipping.

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 encounter problems using the file in another application, deactivate **Insert Broadcast Wave Chunk**, and export the file again.

Set up Broadcast Wave Chunk

Opens the **Broadcast Wave Chunk** dialog where you can enter information.

Insert iXML Chunk

Includes additional project-related metadata, such as project name, author, and project frame rate.

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.

Don’t Use Wave Extensible Format

Deactivates the Wave Extensible format that contains additional metadata, such as the speaker configuration.

Don’t Use RF64-Compliant File Format

Deactivates the RF64-compliant format that allows file sizes to exceed 4 GB.

RELATED LINKS
Attribute Inspector on page 642
Saving File Format Presets on page 1057

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.

- To open the settings for AIFF files, select **AIFF** in the **File Type** pop-up menu.

Sample Rate

Sets the sample rate for the mixdown file.

NOTE

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, because this is the sample rate used on audio CDs.

Bit Depth

Allows you to select a bit depth for the mixdown file. You can select **8 bit**, **16 bit**, **24 bit**, **32 bit**, **32 bit float**, or **64 bit float**. 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 **Lin Dither**dithering plug-in reduces the effects of quantization noise and artifacts when converting the audio to 16 bit. A resolution of 8 bit results in limited audio quality and should only be used in cases where it is unavoidable or explicitly required.

Export as

Allows you to select a channel mode for the mixdown file:

- **Interleaved**

  Allows you to export to an interleaved file.
- **Split Channels**

  Allows you to export the 2 channels of a stereo bus as separate mono files.
- **Mono Downmix**

  Allows you to downmix the 2 channels of a stereo bus to a single mono file.

  For stereo, the **Stereo Pan Law**, as defined in the **Project Setup** dialog, is applied to avoid clipping.

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 encounter problems using the file in another application, deactivate **Insert Broadcast Wave Chunk**, and export the file again.

Set up Broadcast Wave Chunk

Opens the **Broadcast Wave Chunk** dialog where you can enter information.

Insert iXML Chunk

Includes additional project-related metadata, such as project name, author, and project frame rate.

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

Saving File Format Presets on page 1057

MP3 (MPEG 1 Layer 3) Files

MP3 files are highly compressed files that still provide good audio quality. They have the extension **.mp3**.

- To open the settings for MP3 files, select **MPEG 1 Layer 3** in the **File Type** pop-up menu.

Sample Rate

Sets the sample rate for the mixdown file.

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.

Export as

Allows you to select a channel mode for the mixdown file:

- **Interleaved**

  Allows you to export to an interleaved file.

- **Split Channels**

  Allows you to export the 2 channels of a stereo bus as separate mono files.

- **Mono Downmix**

  Allows you to downmix the 2 channels of a stereo bus to a single mono file.

  For stereo, the **Stereo Pan Law**, as defined in the **Project Setup** dialog, is applied to avoid clipping.

High-Quality Mode

Sets the encoder to a different resampling mode. This may deliver better results, depending on your settings. However, it does not allow you to select the **Sample Rate**.

Insert ID3 Tag

Includes ID3 Tag information in the exported file.

Edit ID3 Tag

Opens the **Setup 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.

RELATED LINKS
Saving File Format Presets on page 1057

FLAC Files

Free Lossless Audio Codec files are audio files that are typically 50% to 60% smaller than regular Wave files.

- To open the settings for FLAC files, select **FLAC** in the **File Type** pop-up menu.

Sample Rate

Sets the sample rate for the mixdown file.

NOTE

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, because this is the sample rate used on audio CDs.

Bit Depth

Allows you to select a bit depth for the mixdown file. You can select **8 bit**, **16 bit**, **24 bit**, **32 bit**, **32 bit float**, or **64 bit float**. 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 **Lin Dither**dithering plug-in reduces the effects of quantization noise and artifacts when converting the audio to 16 bit. A resolution of 8 bit results in limited audio quality and should only be used in cases where it is unavoidable or explicitly required.

Export as

Allows you to select a channel mode for the mixdown file:

- **Interleaved**

  Allows you to export to an interleaved file.
- **Split Channels**

  Allows you to export the 2 channels of a stereo bus as separate mono files.
- **Mono Downmix**

  Allows you to downmix the 2 channels of a stereo bus to a single mono file.

  For stereo, the **Stereo Pan Law**, as defined in the **Project Setup** dialog, is applied to avoid clipping.

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.

RELATED LINKS
Saving File Format Presets on page 1057

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**.

- To open the settings for Ogg Vorbis files, select **OggVorbis** in the **File Type** pop-up menu.

Quality

Sets the quality for the variable bit rate encoding. This setting determines the range of the bit rate. The higher the value, the higher the sound quality and the larger the files.

Export as

Allows you to select a channel mode for the mixdown file:

- **Interleaved**

  Allows you to export to an interleaved file.
- **Split Channels**

  Allows you to export the 2 channels of a stereo bus as separate mono files.
- **Mono Downmix**

Allows you to downmix the 2 channels of a stereo bus to a single mono file.

For stereo, the **Stereo Pan Law**, as defined in the **Project Setup** dialog, is applied to avoid clipping.

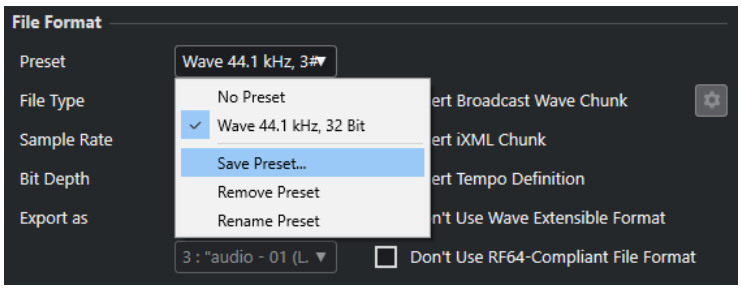
RELATED LINKS
Saving File Format Presets on page 1057

Saving File Format Presets

You can create file format presets from your favorite or most used file format settings.

PROCEDURE

1. In the **File Format** section, set up the **File Type** and the file type-specific settings that you want to save in your preset.
2. Click the **Preset** field, and select **Save Preset** from the pop-up menu.



3. Enter a name for your file format preset.
4. Click **OK**.

RESULT

A file format preset including the file type, sample rate, bit depth, and the **Export as** settings is saved. You can select it from the **Preset** pop-up menu.

Presets are saved with the program and can be used for any project. Presets are stored in the following location:

- On Windows: `\Users\<user name>\AppData\Roaming\Steinberg\<program name>\Presets\AudioFileFormatPreset`

  On macOS: `/Library/Preferences/<program name>/Presets/AudioFileFormatPreset` under your home directory

Presets are also saved in profiles in the **Profile Manager**.

RELATED LINKS
File Formats on page 1051

Synchronization

Synchronization is the process of getting 2 or more devices to play back together at the same speed, position, and phase. These devices can range from audio and video tape machines to digital audio workstations, MIDI sequencers, synchronization controllers, and digital video devices.

If you know the position and speed of the master device, you can align the speed and position of the slave device with it, so that the 2 devices play in perfect sync with each other.

Position (Time)

The following clock signals are used to specify time positions:

- Audio word clock

  Specifies time positions in samples.
- Timecode

  Specifies time positions in video frames.
- MIDI clock

  Specifies time positions in musical bars and beats.

Speed (Clock)

The following clock signals measure the speed of a device:

- Audio word clock

  Measures the sample rate.
- Timecode

  Measures the frame rate.
- MIDI clock

  Measures the tempo.

Phase

Phase refers to the alignment of the position and speed components to each other. Each pulse of the speed component should be aligned with each measurement of the position to achieve the greatest accuracy possible. Each frame of timecode should be perfectly lined up with the correct audio sample. Put simply, phase is the precise position of a synchronized device relative to the master (sample accuracy).

Master and Slave

Calling one device the master and another one the slave can lead to confusion. Therefore, the timecode relationship and the machine control relationship must be differentiated and clearly defined in this regard.

- **Timecode Master**

  The device generating position information or timecode.
- **Timecode Slave**

Any device receiving the timecode and synchronizing or locking to it.

- **Machine Control Master**

  The device that issues transport commands to the system.

- **Machine Control Slave**

  The device receiving timecode commands and responding to them.

Cubase can 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 this case, Cubase is also the timecode slave.

NOTE

In most scenarios, the machine control slave is also the timecode master. Once it receives a play command, the device starts generating timecode for all the timecode slaves to synchronize to.

Timecode Formats

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.

The following timecode formats are supported:

- **LTC**

  Longitudinal timecode or LTC is an analog signal that can be recorded on tape. It should primarily be used for positional information. 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 or VITC is contained within a composite video signal. It is recorded onto video tape and physically tied to each video frame.

- **MTC**

  MIDI timecode or MTC 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 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 real time on the clock for 24 p 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 real time. 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 real time.

NOTE

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 real time is the true frame rate.

Cubase supports the following frame rates:

24 fps

This is the true speed of standard film cameras.

25 fps

This is the frame rate of PAL video.

29.97 fps/29.97 dfps

This is the frame rate of NTSC video. The count can be either non-drop or drop-frame.

30 fps/30 dfps

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. The count can be either non-drop or drop-frame.

IMPORTANT

Video formats with a variable frame rate (VFR) are not supported.

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 within one second in real time. 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. Thus, the NTSC timecode standard known as SMPTE is a 30 fps standard that runs at 29.97 fps in real time.

Clock Sources

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. For digital audio, the speed is determined by the audio clock rate. For 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 between devices via optical cables.

NOTE

Do not confuse the audio clock embedded in the Lightpipe protocol with ADAT Sync, which uses a proprietary DIN plug connection for timecode transmission and machine control.

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

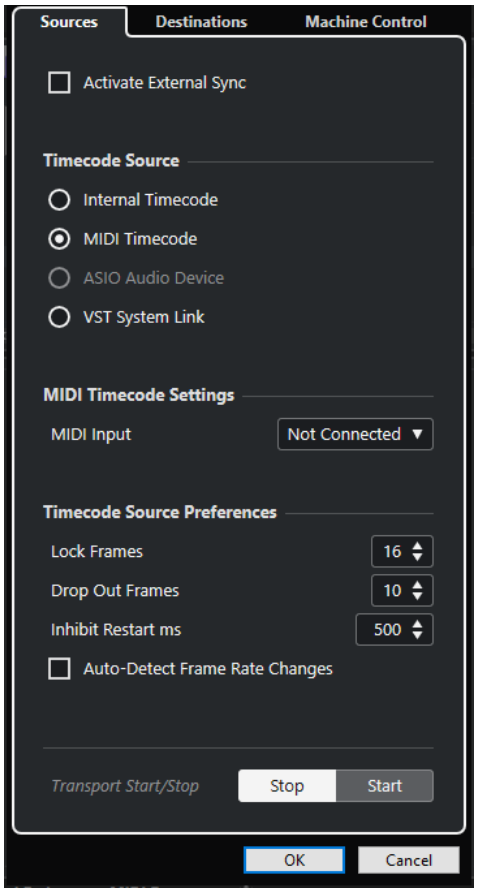
MIDI clock cannot be used to synchronize digital audio. It is only used for MIDI devices to play in musical sync with one another. Cubase cannot be used as a MIDI clock slave.

Project Synchronization Setup Dialog

The **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, basic transport controls are available for testing the system.

To open the **Project Synchronization Setup** dialog, do one of the following:

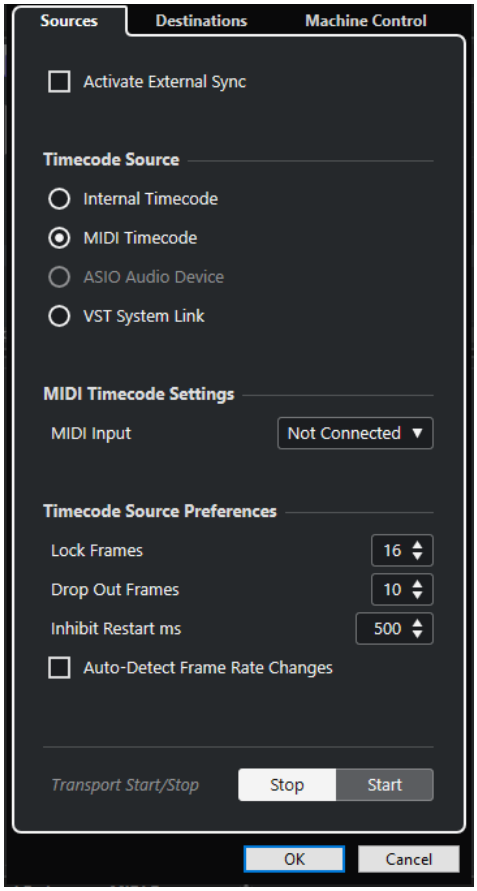
- Select **Transport** > **Project Synchronization Setup**.
- In the **Transport Bar**, **Ctrl/Cmd**-click **Sync**.



RELATED LINKS
Sources Page on page 1063
Destinations Page on page 1065
Machine Control Page on page 1066

Sources Page

The **Sources** page allows you to set up the synchronization inputs and to determine which external signals enter the application.



In the topmost section, the following options are available:

Activate External Sync

Activates/Deactivates the external synchronization.

Timecode Source

The **Timecode Source** section allows you to determine whether Cubase is acting as the timecode master or slave. The following options are available:

Internal Timecode

Sets Cubase as the timecode master that generates all position references for any other device in the system, based on the project timeline and the **Project Setup** settings.

MIDI Timecode

If **Activate External Sync** is activated, this sets Cubase as the timecode slave to any incoming MIDI timecode. You can select the **MIDI Input** ports in the **MIDI Timecode Settings** section.

ASIO Audio Device (Windows only)

Only available for audio cards that support the ASIO positioning protocol. These cards have an integrated LTC reader or ADAT sync port and can perform a phase alignment of timecode and audio clock.

VST System Link

Sets **VST System Link** as a timecode source. This allows for all aspects of sample-accurate synchronization between different computers that are connected via **VST System Link**.

NOTE

Discrepancies between the **Project Frame Rate** and the incoming timecode can cause problems during postproduction, even if Cubase is able to lock to the corresponding timecode.

MIDI Timecode Settings

The **MIDI Timecode Settings** become available if you activate **MIDI Timecode** as a **Timecode Source**.

MIDI Input

Allows you to select the MIDI input ports. To allow Cubase to synchronize to MIDI timecode from any MIDI connection, select **All MIDI Inputs**.

Timecode Source Preferences

If you activate **MIDI Timecode** as a **Timecode Source**, you can set up **Timecode Source Preferences** for working with external timecode. The following options are available:

Lock Frames

Determines how many full frames of timecode it takes for Cubase to lock, that is, to establish synchronization.

NOTE

If you have an external tape transport with a very short start-up time, set **Lock Frames** to a low value to make lock-up even faster.

Drop Out Frames

Sets the number of timecode frames that must be missed until Cubase stops. Using LTC on an analog tape machine can increase the number of drop outs.

Inhibit Restart ms

Some synchronizers still transmit MTC for a short period of time after an external tapemachine has been stopped. These extra frames of timecode sometimes cause Cubase to restart suddenly. **Inhibit Restart ms** allows you to control the amount of time in milliseconds that Cubase waits before restart (ignoring incoming MTC) once it has stopped.

Auto-Detect Frame Rate Changes

Notifies you about frame rate or timecode changes and interrupts playback or recording. Activate this if you want to diagnose problems with timecode and external devices.

Transport Start/Stop

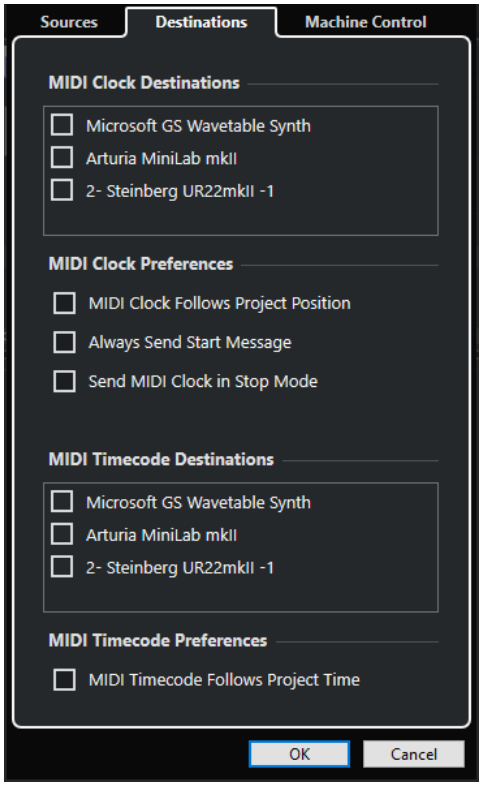
Starts/Stops playback in Cubase.

RELATED LINKS

Activating VST System Link on page 1073
Project Setup Dialog on page 100

Destinations Page

The **Destinations** page allows you to set up the synchronization outputs and to determine which external signals leave the application.



MIDI Clock Destinations

In the **MIDI Clock Destinations** section, you can select any MIDI ports that you want to use to output MIDI clock. Some MIDI devices, such as drum machines, can match their tempo and location to incoming MIDI clock.

MIDI Clock Preferences

In the **MIDI Clock Preferences** section, the following options are available:

MIDI Clock Follows Project Position

Ensures that MIDI clock follows Cubase.

Always Send Start Message

MIDI clock transport commands include start, stop, and continue. Activate this if a MIDI device does not recognize the continue command.

Send MIDI Clock in Stop Mode

Activate this if a MIDI device needs MIDI clock to run continuously in order to operate arpeggiators and loop generators.

MIDI Timecode Destinations

In the **MIDI Timecode Destinations** section, you can specify the MIDI ports to which MTC is routed.

NOTE

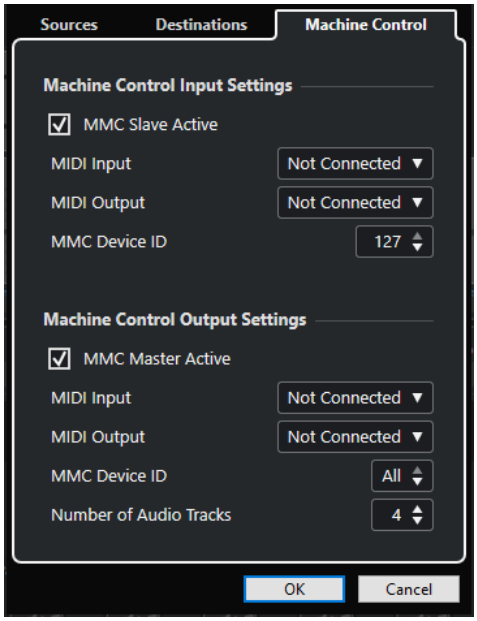
Some MIDI interfaces send MTC over all ports by default. If this is the case, only select one port of the interface for the MTC.

MIDI Timecode Preferences

In the **MIDI Timecode Preferences** section, the following options are available:

MIDI Timecode Follows Project Time
Ensures that the MIDI output always follows the time position of Cubase.

Machine Control Page



Machine Control Input Settings

These settings become available if you select **MIDI Machine Control** as the machine control input. In the **Machine Control Input Settings** section, you can set up Cubase to follow incoming transport commands and to respond to record-enabling commands for audio tracks. This allows Cubase to integrate into larger studio systems with centralized machine control and synchronization such as theatrical mixing stages.

The following options are available:

MMC Slave Active
Allows you to activate the MMC slave.

Machine Control Output Settings

In the **Machine Control Output Settings** section, the following options are available:

MMC Master Active
Routes transport commands to any device while sync is enabled.

MIDI Input

Determines which MIDI port in your system receives MMC commands. Set this to a MIDI port that is connected to the desired MIDI device.

MIDI Output

Determines which MIDI port in your system sends MMC commands. Set this to a MIDI port that is connected to the desired MIDI device.

MMC Device ID

Set this to the same device ID as in the **Machine Control Input Settings** section.

NOTE

If more than one machine is receiving MMC commands or if you do not know the device ID, you can set the ID to **All**. However, devices that can only listen to their specific IDs do not work if the ID is set to **All**.

External Synchronization

To activate external synchronization, do one of the following:

- Select **Transport** > **Activate External Sync**.
- Select **Transport** > **Project Synchronization Setup**, and on the **Sources** page, activate **Activate External Sync**.
- Cubase awaits incoming timecode from the chosen timecode source, as 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.

VST System Link

VST System Link is a digital audio network system that allows you to link several computers using digital audio hardware and cables.

Linking 2 or more computers allows you to split different tasks and different tracks between different computers. You can run CPU-intensive processes, such as send effect plug-ins or VST instruments on one computer, and record audio tracks on another one.

VST System Link supplies transport and sync control, as well as up to 16 MIDI ports, with 16 channels each.

With **VST System Link**, the signal is passed from one machine to the next and eventually returns to the first machine.

For this to work, you need 2 or more computers that use the same or different operating systems. In addition to this, for each computer that is part of the network, you need:

- Audio hardware with digital inputs and outputs and a specific ASIO driver.

  The same digital formats and connection types.
- At least one digital audio cable, such as S/PDIF, ADAT, TDIF, or AES.
- A **VST System Link** host application.

NOTE

You might want to invest in a KVM (Keyboard, Video, Mouse) switchbox. This allows you to use the same keyboard, monitor, and mouse to control each computer in the system, and to switch between computers very rapidly.

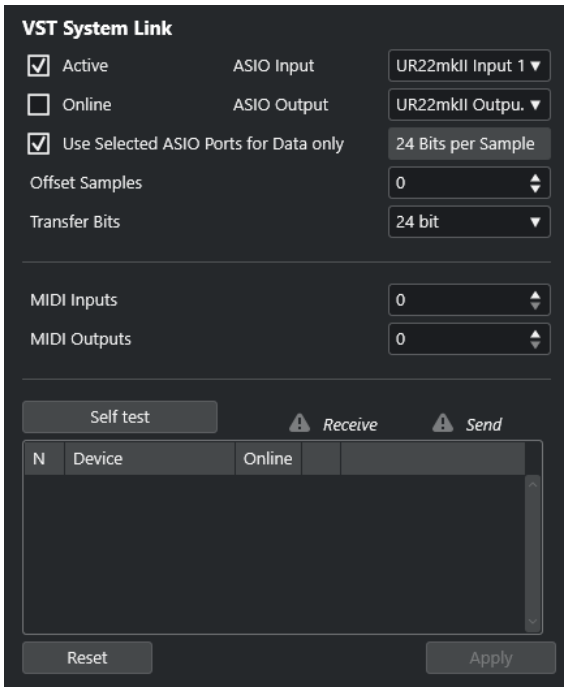
Setting up VST System Link

To be able to work with **VST System Link**, you must first set up the network, configure the audio hardware, and set up the digital audio connections.

VST System Link Section

The **VST System Link** section allows you to set up **VST System Link**.

- To open the **VST System Link** section, select **Studio** > **Studio Setup**, and select **VST System Link** from the **Devices** list.



Active

Activates **VST System Link**.

Online

Puts the computer online.

ASIO Input

Allows you to define the networking input channel.

ASIO Output

Allows you to define the networking output channel.

Use Selected ASIO Ports for Data only

Activate this if you want to devote more bandwidth to MIDI and send **VST System Link** information on the entire channel. This channel is then no longer available for audio transfer.

Offset Samples

Allows you to set an offset for the computer, so that it plays slightly ahead of or after the rest.

Transfer Bits

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.

MIDI Inputs

Allows you to set the number of MIDI input ports.

MIDI Outputs

Allows you to set the number of MIDI output ports.

Self test

Allows you to test the network.

Receiving

Lights up if the computer is active.

Sending

Lights up if the computer is active.

List

Shows the name of each computer.

Setting up a Network

You can set up a network by connecting computers.

PROCEDURE

1. Use a digital audio cable to connect the digital output of computer 1 to the digital input of computer 2.

   If you have more than 2 computers, add the others one by one.

2. Use a cable to connect the digital output of computer 2 to the digital input of computer 1.

   VST System Link is a daisy chain system, that means, that 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.

   NOTE

   If a card has more than one set of inputs and outputs, choose whichever suits you – usually, the first set is best.

Configuring the Audio Clock

To be able to use **VST System Link**, the clock signals on your ASIO cards must be synchronized correctly.

PREREQUISITE

For each computer in the network, the following must apply:

- The correct audio driver is selected in the **Studio Setup** dialog.
- The clock mode or sync mode is set up in the ASIO control panel of the audio hardware.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. From the **Devices** list, select the your audio hardware.
3. Click **Control Panel**.
4. Set one audio hardware to be the clock master and all other cards to be clock slaves. Consult the documentation if required.

   IMPORTANT

   If you set up more than one card as the clock master, the network cannot function correctly.

   However, if you use an external clock from a digital mixing desk or a special word clock synchronizer, for example, 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.

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. Refer to the documentation of your audio hardware for details.

RELATED LINKS

Selecting an Audio Driver on page 17
ASIO Driver Setup Page on page 20

Adjusting the Buffer Size

In a **VST System Link** network, adjusting the buffer size to minimize latency is of vital importance. This is due to the fact that the latency of a **VST System Link** network equals the total latency of all the ASIO cards in the system added together.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. From the **Devices** list, select your audio hardware.
3. Click **Control Panel**.
4. Lower the size of the buffers.

   The lower the buffer size, the lower the latency. It is best to keep to fairly low buffer sizes if your system can handle it. About 12 ms or less is usually a good idea.

   IMPORTANT

   Latency does not affect the synchronization, but it can affect the time it takes to send and receive MIDI and audio signals, or it can make the system seem sluggish.

Audio Hardware Settings that Affect VST System Link

Specific audio hardware settings might change the digital information in a way that the correct functioning of **VST System Link** is affected.

You can find these settings in the control panel or in an additional application for your audio hardware. Make sure that the following conditions are met:

- Any additional format settings for digital ports that you use for **VST System Link** data must be turned off.

  If you use an S/PDIF connection for **VST System Link**, for example, turn off **Professional format**, **Emphasis**, and **Dithering**.
- Any mixer application of your audio hardware that allows for level adjustments of digital inputs and outputs must be disabled.

  Alternatively, you can set the levels for the **VST System Link** channels to ±0 dB.
- Digital signal processing, such as pan or effects, must be turned off for the **VST System Link** signal.

- For RME Audio Hammerfall DSP audio hardware, select the default or plain preset for the **Totalmix** function.

  Otherwise, signal loops might prevent **VST System Link** from working properly.

Setting up Sample Rates

All projects on all computers must be set to the same sample rate.

PROCEDURE

1. Select **Project** > **Project Setup**.
2. In the **Project Time Displays** section, open the **Sample Rate** pop-up menu, and select a sample rate.

Setting up Digital Audio Connections

PROCEDURE

1. Select **Studio** > **Audio Connections**.
2. Click the **Inputs** tab, and click **Add Bus**.
3. In the **Add Input Bus** dialog, configure the bus.
4. Click **Add Bus**.
5. Click the **Outputs** tab, and click **Add Bus**.
6. In the **Add Output Bus** dialog, configure the bus.
7. Click **Add Bus**.
8. Repeat these steps for all applications.

   Set up the same configuration in all applications. If you have 4 stereo output busses on computer 1, set up 4 stereo input busses on computer 2, etc.
9. Route the applications to the digital inputs and outputs.

RELATED LINKS
Audio Bus Setup on page 23
Audio Connections Window on page 29

Verifying the Digital Connection

PROCEDURE

1. Connect an audio source to your audio interface.
2. Start recording, playing back, and mixing.
3. On computer 1, play back some audio.
4. Select **Studio** > **MixConsole**, and route the channel that contains the audio material to one of the digital output busses.
5. On computer 2, select **Studio** > **MixConsole**, and locate the corresponding digital input bus.

   The audio that is played back should now appear in the application running on computer 2, and the input bus level meters should move.

RESULT

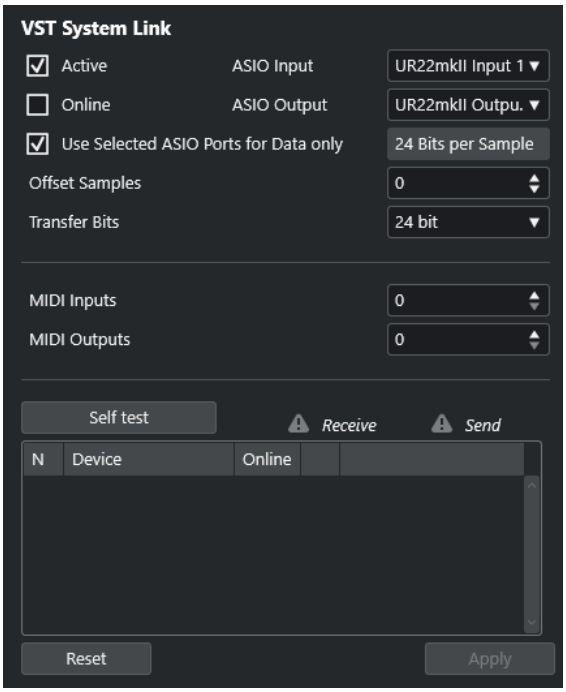
You have verified that the digital connection works as intended. You can reverse this procedure so that computer 2 plays back and computer 1 listens.

Activating VST System Link

You must activate **VST System Link** on all network computers to be able to work with **VST System Link**.

PROCEDURE

1. Select **Transport** > **Project Synchronization Setup**, and on the **Sources** tab, activate **VST System Link** as the timecode source.
2. Select **Studio** > **Studio Setup**.
3. From the **Devices** list, select **VST System Link**.



4. Use the **ASIO Input** and **ASIO Output** pop-up menus to define is the networking channel to carry the **VST System Link** information.

   NOTE

   The networking signal is carried on only one bit of one channel. In an ADAT-based system 7 channels of 24-bit audio and 1 channel of 23-bit audio are used for networking. As a result, you still have approximately 138 dB headroom on this channel.

5. Activate **Active** at the top left of the **VST System Link** setup.
6. Repeat the steps for each computer in the network.

RESULT

The sending and receiving indicators on each active computer start flashing, and the name of each computer is listed in the **Self test** section of the dialog. Each computer is assigned a random number.

The name will be shown in the **VST System Link** window of every computer in the network. You can double-click the name of the computer and enter another name.

NOTE

If you do not see the name of each computer, repeat the steps above. 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
Sources Page on page 1063

Putting Network Computers Online

You must put the network computers online so that they can send and receive transport and timecode signals and their sequencer applications can be started and stopped.

PREREQUISITE

All computers have their tempos set to the same value.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. From the **Devices** list, select **VST System Link**.
3. Activate **Online**.
4. Repeat this for each computer in the network.

RESULT

The computers are online.

AFTER COMPLETING THIS TASK

Start playback on one computer to verify that the system is working and that all computers start and play in time.

VST System Link sends and understands all transport commands. This allows you to control the entire network from one computer. However, any computer can control any and all of the others. This is due to the fact that **VST System Link** is a peer-to-peer network, and that there is no absolute master computer.

Activating MIDI Ports for VST System Link

You can activate MIDI input and output ports for **VST System Link**. This allows you to route MIDI tracks to VST instruments running on another computer.

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. From the **Devices** list, select **VST System Link**.
3. Open the **Routing** section of the **Inspector**.
4. Specify the required number of MIDI ports via the **MIDI Inputs** and **MIDI Outputs** value fields.
5. Create a MIDI track.

RESULT

The **Input Routing** and **Output Routing** pop-up menus now show the specified **VST System Link** ports.

This allows you to route MIDI tracks to VST instruments running on another computer.

Application Examples

VST System Link allows you to split different tasks between 2 or more computers. The following application examples are intended to give you an idea of the possibilities.

Configuring a Main Mix Computer

Configuring one computer as a main mix computer that receives audio from your other computers allows you to mix internally on the computer.

In the following example, we assume that you are using 2 computers: computer 1 as your main mix computer and computer 2 for 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. On computer 1, use an unused set of outputs, such as an analog stereo output, connected to your monitoring equipment, to listen to the audio playback.
2. On computer 2, route each of the 2 audio tracks to a separate output bus connected to the digital outputs, bus 1 and 2, for example.
3. Route the FX channel track to another **VST System Link** bus, bus 3, for example.
4. Route the VST instrument channel to yet another bus, bus 4, for example.
5. On computer 1, 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, such as 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 on computer 2 will be sent live to the new tracks on computer 1, allowing you to hear them with any tracks you play back on computer 1.

AFTER COMPLETING THIS TASK

If you notice a processing delay while you listen to signals coming from your other computers during monitoring, try the following to compensate for latency issues:

- Activate **ASIO Direct Monitoring** on the **Audio System** device panel for your hardware if your audio hardware supports this.
- Alternatively, open the **Studio Setup** dialog, and on the **VST System Link** page, change the **Offset Samples** value.

Configuring a Computer as Submixer

If you have more audio tracks than you have **VST System Link** busses, you can use a computer mixer as a submixer.

PROCEDURE

- 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.

Routing MIDI Tracks to VSTis on Other Computers

You can route MIDI tracks from one computer to VST instruments on another computer. This allows you to use one computer for playback and recording and the other one as a VSTi 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 the **VST Instruments** window and assign an instrument to the first slot.
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. Define the MIDI input of the track as **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. Activate monitoring for the MIDI track on computer 2, so that it listens and responds to any incoming MIDI commands.

   In Cubase, click the **Monitor** button in the track list or **Inspector**.
8. Start playback on computer 1.

   Computer 1 sends 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 many extra VST instruments in this manner, considerably expanding your sound palette. **VST System Link** MIDI is also sample-accurate, and thus has much tighter timing than other hardware MIDI interfaces.

Routing Audio Sends to Other Computers

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.
2. Add the desired effect as an insert effect for the track.
3. In the **Routing** section of the **Inspector**, select one of the **VST System Link** busses as the input for the audio track.
4. Route the channel to 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. Open the **Sends** section 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 effect.
9. Use the **Send** slider to adjust the amount of effect as usual.

RESULT

The signal is 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. The number of effects made available in this manner is only limited by the number of ports used in the **VST System Link** connection, and by the performance of computer 2.

Recording Tracks on Other Computers

You can record tracks on another computer. This is useful if the hard drive on one computer is not fast enough to run as many audio tracks as you need.

PROCEDURE

- Add tracks on another computer and record on them.

RESULT

This creates a virtual RAID system, with several disks all operating together. All tracks remain locked together just as tightly as if they were all running on the same machine.

Playing Back Video on Other Computers

You can play back video on another computer to free up resources for audio and MIDI processing on your main CPU. This is recommended, as playback of high-resolution video can be quite demanding on the CPU.

PROCEDURE

- Move video tracks to another computer.

RESULT

Since all transport commands respond on the **VST System Link** computers, scrubbing video is possible even in case it is coming from another computer.

When scrubbing, the playback on the linked systems may not be perfectly in sync. In addition to this, there are some further restrictions when scrubbing via **VST System Link**:

- Always use the system where you started scrubbing to control the scrubbing.
  Changing the scrub speed on a remote system only changes the speed on the local system.
- You can start playback on all systems.
  This stops scrubbing and enters playback on all systems in sync.

Video

Cubase allows you to work with video content.

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.

The video export function allows you to share your videos with clients or other users.

IMPORTANT

Videos are exported with a resolution of 1920 x 1080 px (Full HD). Video files with a lower or higher resolution than Full HD are upscaled or downscaled on export.

RELATED LINKS
Video File Compatibility on page 1079
Importing Video Files on page 1081
Preparations for Video Playback on page 1083
Video Export on page 1091
Extracting Audio from Video on page 1093

Video File Compatibility

When working on a project involving a video file, you must make sure that the video file type works on your Cubase 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 which video files are supported, refer to the support area at steinberg.net.

RELATED LINKS
Codecs on page 1080

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 the like can also be saved 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 support area at steinberg.net.

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 real time is the true frame rate.

Cubase supports the following frame rates:

24 fps

This is the true speed of standard film cameras.

25 fps

This is the frame rate of PAL video.

29.97 fps/29.97 dfps

This is the frame rate of NTSC video. The count can be either non-drop or drop-frame.

30 fps/30 dfps

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. The count can be either non-drop or drop-frame.

IMPORTANT

Video formats with a variable frame rate (VFR) are not supported.

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 it can become necessary to display video in a large format in order to see details or to enable other people present to see the video, too. Cubase provides several types of video output devices to accomplish this.

Dedicated Video Cards

You can use a dedicated video card. Video is sent directly to the output of this video device.

The following video cards are supported:

- Blackmagic Design video output devices

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.
- Video output via FireWire is not supported.

RELATED LINKS
Video Player Page on page 1083

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 100

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/macOS Finder and dropping them in your project. If you want Cubase to automatically extract the audio, activate **Extract Audio on Import Video File** in the **Preferences** dialog (**Video** page).

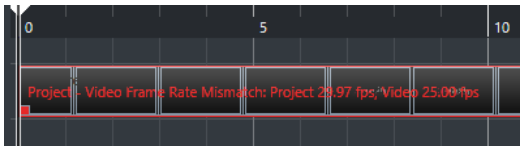
RELATED LINKS
Pool on page 588
Extracting Audio from Video on page 1093

Adopting the Project 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 Frame Rate 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 reset it. In this case, you must snap the video event to the timeline to ensure proper positioning and synchronization within the project.

Thumbnail Cache Files

For every imported video file, Cubase automatically creates a thumbnail cache file.

RELATED LINKS
Manually Generating Thumbnail Cache Files on page 1082

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, select the video event, and select **Media** > **Generate Thumbnail Cache**.

NOTE

You can only refresh existing thumbnail cache files 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.

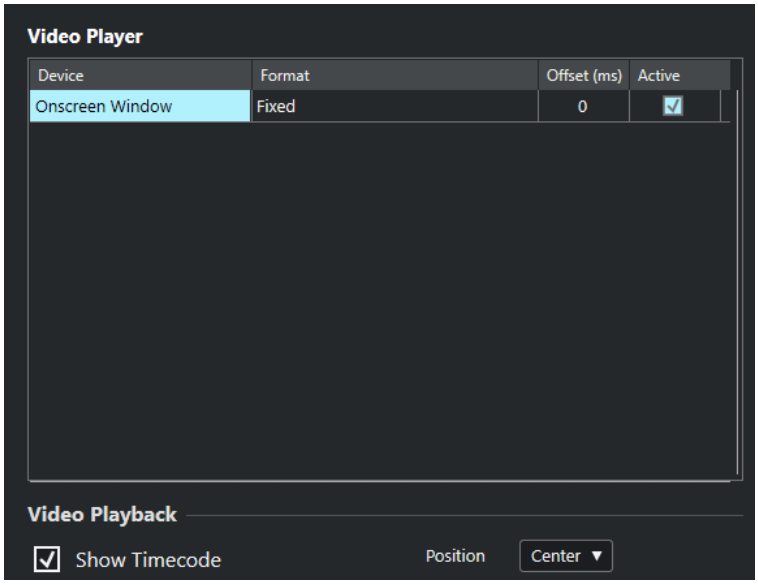
IMPORTANT

Your graphics card must support OpenGL 2.0 or higher.

Video Player Page

The **Video Player** setup page in the **Studio 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 **Studio** > **Studio Setup**, and activate **Video Player** in the **Devices** list.



The following options are displayed:

Device

Lists the video output devices that are available on your system.

Format

Allows you to select an output format.

NOTE

The **Onscreen Window** device only supports a fixed format.

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.

Active

Allows you to activate the device that you want to use for playing back video.

Show Timecode

Allows you to show the timecode.

Position

Allows you to determine the position for the timecode display.

Activating a Video Output Device

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. In the **Devices** list, activate **Video Player**.

   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 not connected any external devices, you can use the **Onscreen Window** device that allows you to play back the video file on your computer monitor.

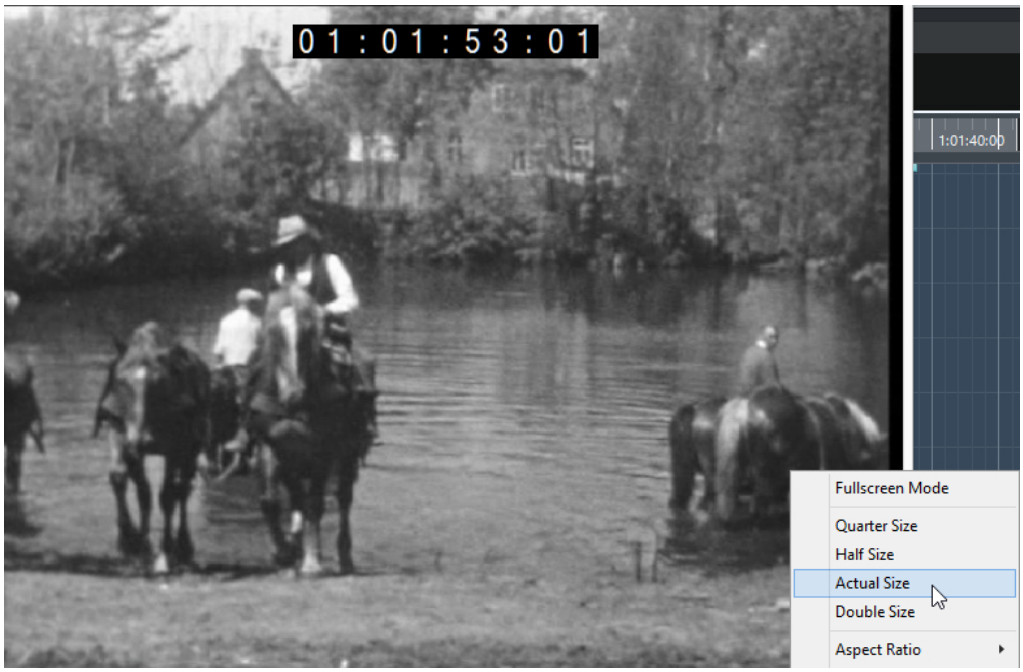
RELATED LINKS

Video Output Devices on page 1080

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 **Studio** > **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 while maintaining its original aspect ratio.
- NOTE

  In full screen mode, the aspect ratio of the video is always maintained.

Scrubbing Video

You can scrub video events, that is, play them back forwards or backwards.

PROCEDURE

1. Select **Studio** > **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.

When working with video events, the following applies:

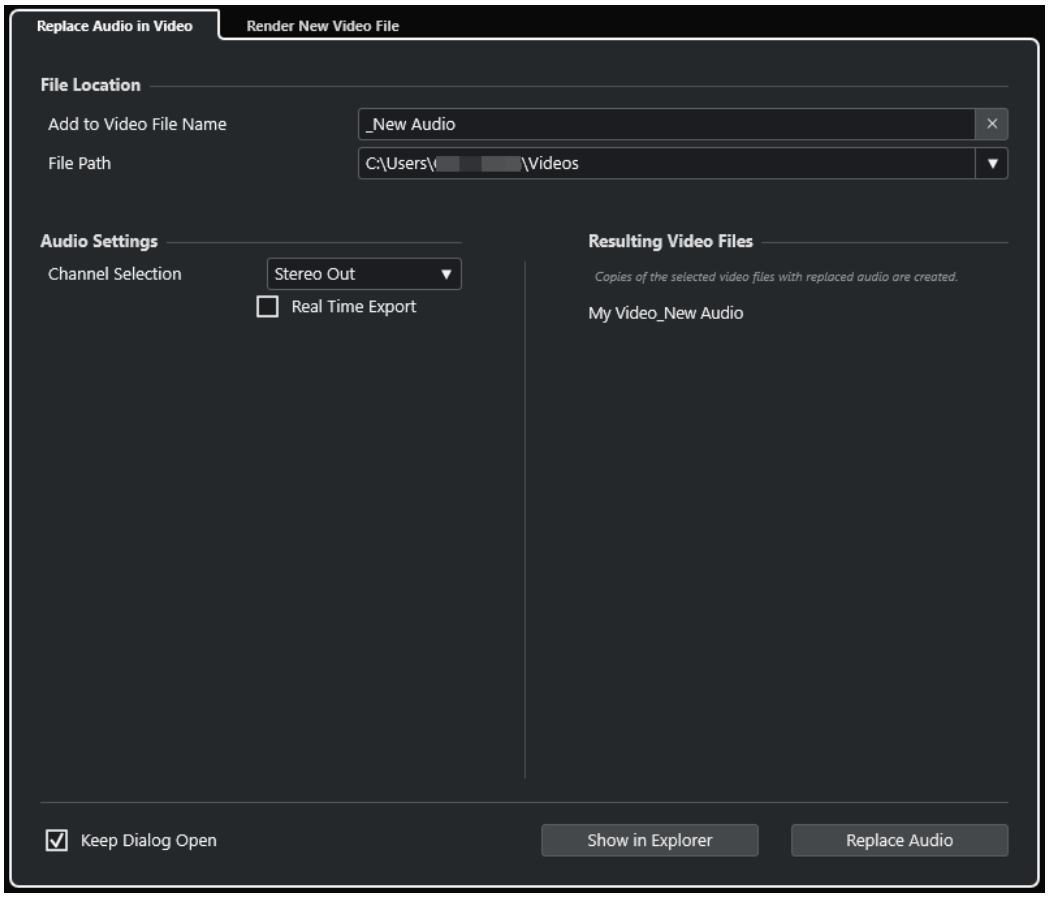
- You can view and edit video events in the **Project** window. A video event triggers the playback of the corresponding video clip.
- You can copy and trim video events.
- You cannot draw, glue, and mute video events, or apply fades or crossfades.
- You can create track versions for video tracks.

RELATED LINKS
Track Versions on page 174

Export Video Dialog

The **Export Video** dialog provides settings for replacing audio in video files as well as for exporting video files from your project.

- To open the **Export Video** dialog, select **File** > **Export** > **Video**.



The following tabs are available:

Replace Audio in Video

Allows you to replace the audio in one or more video files.

Render New Video File

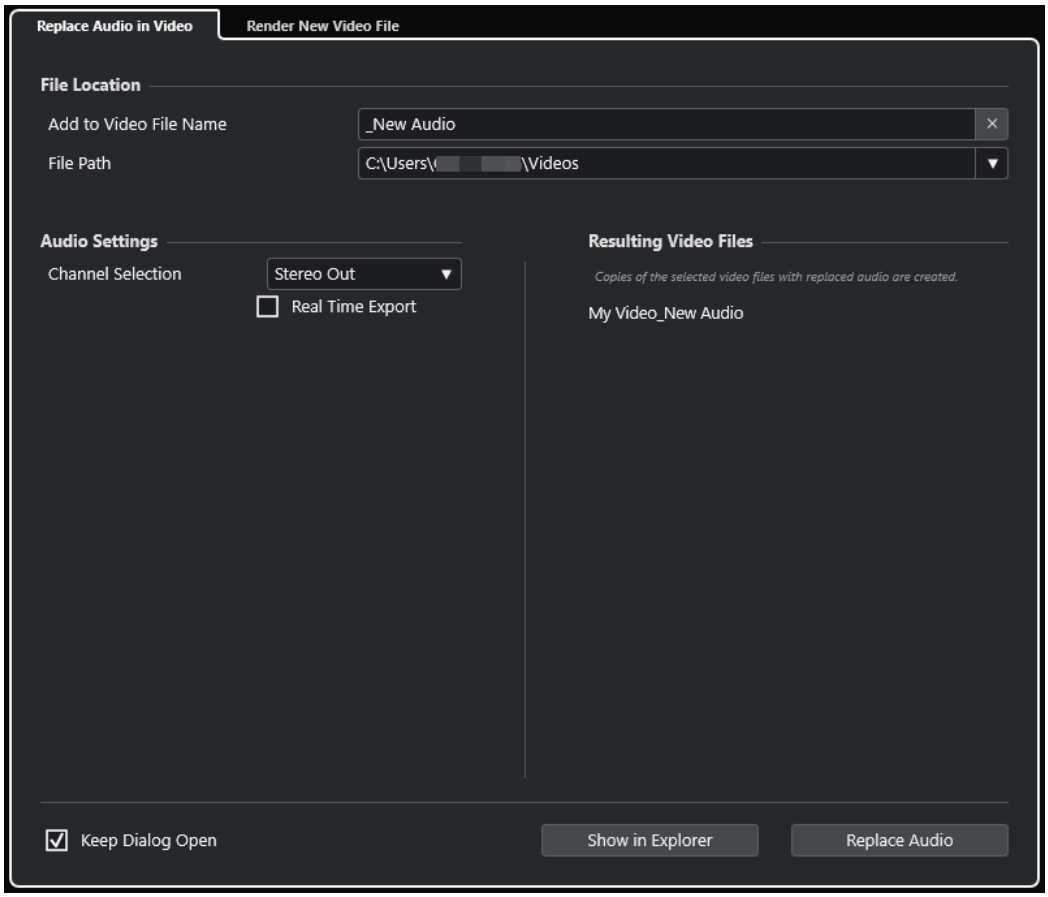
Allows you to export video files from your project.

RELATED LINKS
Video Export on page 1091
Replace Audio in Video Tab on page 1087
Render New Video File Tab on page 1090

Replace Audio in Video Tab

The **Replace Audio in Video** tab of the **Export Video** dialog allows you to embed your sound mix in one or more video files of the project without re-rendering them.

- To open the **Replace Audio in Video** tab of the **Export Video** dialog, select **File** > **Export** > **Video**, and click **Replace Audio in Video**.



File Location

Add to Video File Name

Allows you to add the specified text to the name of the exported video file.

File Path

Allows you to specify the file path of the exported video file.

Click **Path Options** to open a pop-up menu with file path options:

- **Choose** opens the File Explorer/macOS Finder, allowing you to navigate to a file location.
- **Recent Paths** allows you to select a recently selected file location.
- **Clear Recent Paths** allows you to delete all recently selected file locations.

Audio Settings

Channel Selection

Allows you to select a stereo output channel for export. **MixConsole** settings and insert effects are taken into account.

Real Time Export

Allows you to export the audio mixdown in real time. Real time export takes at least the same time as regular playback. Activate this if you use external effects or instruments, or if you use VST plug-ins that require time to update correctly during the mixdown. For further information, refer to the documentation of the respective plug-ins.

NOTE

- If you export external effects or instruments in real time, you must also activate **Monitor** for the respective audio channels.
- **Real Time Export** affects only the audio export.

Resulting Video Files

This section provides information about the resulting video files.

RELATED LINKS
Video Export on page 1091
Render New Video File Tab on page 1090

Replacing Audio in Selected Video Files

You can embed your stereo sound mix in one or more selected video files without re-rendering them. This is not only safer, but also quicker.

PREREQUISITE

Your project contains one or more video events and you have arranged and mixed the audio to a stereo output bus.

PROCEDURE

1. Select one or more video events in your project.
2. Select **File** > **Export** > **Video**.
3. In the **Export Video** dialog, open the **Replace Audio in Video** tab.
4. In the **File Location** section, choose a **File Path** for the videos that contain the new audio.

   Copies of the original video files are saved at this location.
5. Optional: In the **Add to Video File Name** field, enter a string that you want to add to the file names of the original video files.

   The resulting names of the video files are displayed in the **Resulting Video Files** section of the **Export Video** dialog.
6. In the **Audio Settings** section, open the **Channel Selection** pop-up menu, and select a stereo output bus.

   NOTE

   The resulting videos are copies of the entire video file. If the lengths of the video events in your project do not correspond to the lengths of the original video files, because you trimmed the events, for example, the resulting video files are longer than the video events in the project. As a result, they contain silent portions.
7. Click **Replace Audio**.

RESULT

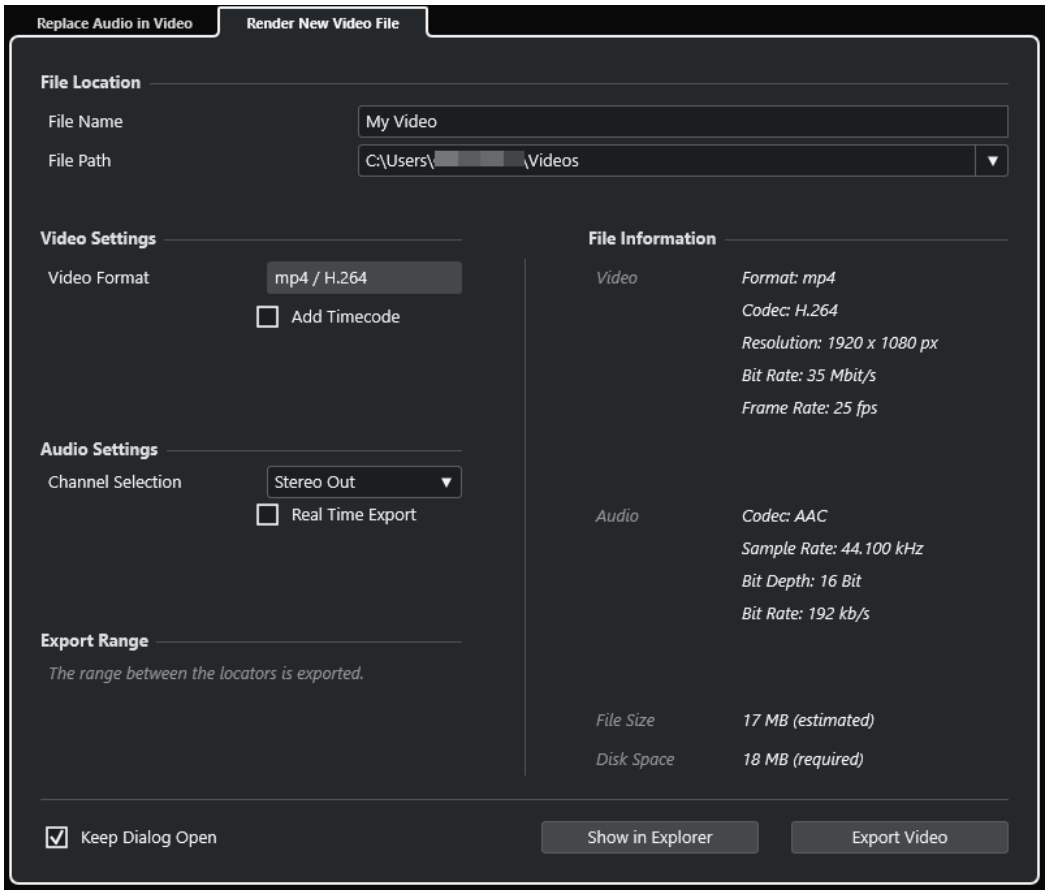
The original video files are copied to the specified location, and an audio mixdown of the selected stereo output bus is embedded into the files.

The resulting video files are MP4 files. The embedded audio is compressed using an AAC LC encoder with 192 kbps at a constant bit rate.

Render New Video File Tab

The **Render New Video File** tab of the **Export Video** dialog allows you to export a new video file.

- To open the **Render New Video File** tab of the **Export Video** dialog, select **File** > **Export** > **Video**, and click **Render New Video File**.



File Location

File Name

Allows you to specify the name of the exported video file.

File Path

Allows you to specify the file path of the exported video file.

Click **Path Options** to open a pop-up menu with the following file path options:

- **Choose** opens the File Explorer/macOS Finder, allowing you to navigate to a file location.
- **Recent Paths** allows you to select a recently selected file location.
- **Clear Recent Paths** allows you to delete all recently selected file locations.

Video Settings

Video Format

Shows the format of the exported video file.

Add Timecode

Adds the project timecode to the exported video file.

Audio Settings

Channel Selection

Allows you to select a stereo output channel for export. **MixConsole** settings and insert effects are taken into account.

Real Time Export

Allows you to export the audio mixdown in real time. Real time export takes at least the same time as regular playback. Activate this if you use external effects or instruments, or if you use VST plug-ins that require time to update correctly during the mixdown. For further information, refer to the documentation of the respective plug-ins.

NOTE

- If you export external effects or instruments in real time, you must also activate **Monitor** for the respective audio channels.
- **Real Time Export** affects only the audio export. Video is processed as usual.

Export Range

This section provides information about the exported locator range.

File Information

This section provides detailed information about the exported video file.

General Options

In the bottom section, the following options are available:

Keep Dialog Open

Activate this to keep the dialog open after clicking **Export Video**.

Export Video

Allows you to export your video as specified.

RELATED LINKS
Video Export on page 1091
Replace Audio in Video Tab on page 1087

Video Export

You can export a video file from your project. This allows you, for example, to share sections of intermediate results or finished videos with clients or other users.

The **Export Video** function allows you to export a video and a stereo audio signal that are enclosed between the left and right locators. This allows you to export a specific section or the entire project by setting the locators accordingly.

Videos are exported in the following format:

- Container format: MP4
- Video compression codec: H.264 without long group of pictures (Long GOP) sequences
- Resolution: 1920 x 1080 px (Full HD)

IMPORTANT

Video with a lower or higher resolution than Full HD is upscaled or downscaled on export.

- Frame rate: Identical with the project frame rate
- Audio compression codec: AAC
- Sample rate: Identical with the project sample rate

IMPORTANT

Video export supports sample rates of 44.1 kHz and 48 kHz only.

- Bit depth: 16 bit

You can only add a stereo output channel to the exported video file. We recommend routing all mono, stereo, or multi-channel channels that you want to export to a stereo output channel via send, and selecting this output channel in the **Export Video** dialog.

RELATED LINKS
Export Video Dialog on page 1086
Exporting Video Files on page 1092

Exporting Video Files

You can export a video, including a stereo audio signal of your whole project or of a specific range, as an MP4 video file.

PREREQUISITE

- Your project sample rate is set to 44.1 kHz or 48 kHz.
- To export external audio signals, you have activated **Monitor** for the corresponding channel.

PROCEDURE

1. Set up the left and right locators to encompass the section that you want to export.
2. Set up the audio in your project so that it plays back the way you want.

   NOTE

   You can only add a stereo output channel to the exported video file. We recommend routing all mono, stereo, or multi-channel channels that you want to export to a stereo output channel via send.

3. Select **File** > **Export** > **Video**.
4. In the **Export Video** dialog, activate the **Render New Video File** tab.
5. Select the stereo output channel that you want to export.

   NOTE

   Make sure that the selected output channel contains all audio that you want to use for the exported file. For example, solo the channels that you want to export, or mute the channels that you do not want to export.

6. Make any further export settings.
7. Click **Export Video**.

RESULT

The video file is exported.

RELATED LINKS

Export Video Dialog on page 1086

Extracting Audio from Video

You can extract the audio stream of a video file on import.

PROCEDURE

1. Do one of the following:
   - 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.
   - Select **Media** > **Extract Audio from Video File**.
2. In the dialog, select the video file, and click **Open**.
3. In the **Import Options** dialog, select the desired import options.

RESULT

The extracted audio stream is added to the project on a new audio track and can be edited in the same manner as any other audio material.

RELATED LINKS

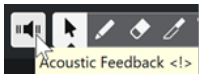
Pool on page 588
On Import Audio Files Settings on page 287
Importing Video Files on page 1081

Key Commands

Key commands are assigned to most main menus and functions in Cubase. They are used for all of your projects.

You can view and add key commands in the **Key Commands** dialog. Key command assignments are also shown in the tooltips.

Tooltips with an exclamation mark at the end have not been assigned a key command yet.



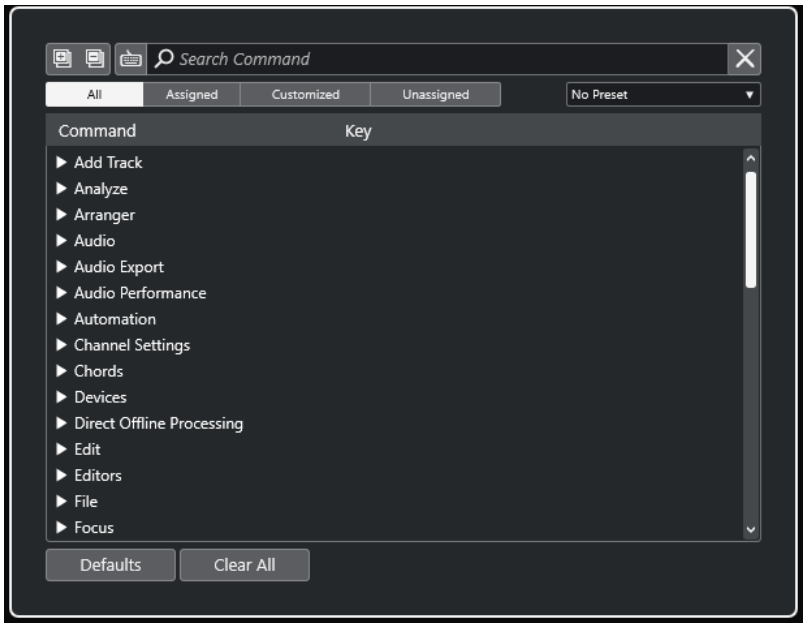
You can save key command settings as a key commands file, which is stored separately and can be imported into any project. In this manner, you can quickly and easily recall customized settings, when moving projects between different computers, for example. The settings are saved in an XML file on the hard disk.

RELATED LINKS
Saving Key Command Presets on page 1099

Key Commands Dialog

The **Key Commands** dialog allows you to view and edit key commands for the main menus and functions in Cubase.

- To open the **Key Commands** dialog, select **Edit** > **Key Commands**.



Key Commands Section

The following options are available in the key commands section:

Expand All

Expands all folders.

Collapse All

Reduces all folders.

Press Key/Search Command

Activate this button and press a key to verify if a specific key is already assigned to a command.

Deactivate this button and enter the name of a Cubase command to filter the list.

Reset Search

Resets the search field. This button is only available with **Press Key/Search Command** deactivated.

All

Shows all commands.

Assigned

Shows all assigned key commands.

Customized

Shows all customized key commands.

Unassigned

Shows all unassigned commands.

Select Preset

Opens a menu from which you can load and save key command presets.

Command

Shows the Cubase commands to which you can assign key commands. The key commands are arranged in category folders.

Key

Shows the assigned key command for the command that is selected in the **Command** column.

If you select a command that has no key assigned to it, the **Key** column shows **click here**. Click and press the key that you want to assign to the selected command.

If you select a command that has a key assigned, the following functions are shown to the right of the key:

- **Remove Key Command**

  Removes the assigned key from the command.
- **Reset Key Command**

  Resets the key command. This is only available if you changed a key command assignment.
- **Assign Additional Key**

Assigns an additional key command. The additional key command can be used as an alternative to the default key command.

Defaults

Resets all key commands to their default settings.

Clear All

Removes all key command assignments.

Macros Section

The macros section allows you to set up a combination of several functions or commands that you want to be performed.

The following options are available:

Macros

Shows/hides the macros section that allows you to set up a combination of several functions or commands to be performed as a macro.

New Macro

Adds a new empty macro.

Duplicate Macro

Duplicates the selected macro.

Delete Macro

Deletes the selected macro.

Add Command

Adds the command that is selected in the key commands list above to the selected macro.

Remove Command from Macro

Removes the selected command from the macro.

Move Command Up in Macro

Allows you to change the order of commands in the macro.

Move Command Down in Macro

Allows you to change the order of commands in the macro.

Command

Shows the Cubase commands to which you can assign key commands. The key commands are arranged in category folders. If you select a command from the list, the following functions become available:

- **Remove Key Command**

  Removes the assigned key from the macro. This is only available if a key command is assigned to it.

Keys

Shows the assigned key command for the macro that is selected in the **Command** column.

Run Macro

Runs the selected macro.

RELATED LINKS
Assigning Key Commands on page 1097
Searching for Key Commands or Assignments on page 1097
Resetting Key Commands on page 1099
Removing Key Command Assignments on page 1098
Loading Key Command Presets on page 1099
Saving Key Command Presets on page 1099
Adding Macros on page 1098

Assigning Key Commands

You can assign key commands in the **Key Commands** dialog.

PROCEDURE

1. Select **Edit** > **Key Commands**.
2. Do one of the following:
   - In the key commands section, open the corresponding category folder, and select the function to which you want to assign a key command.
   - Deactivate **Press Key/Search Command**, in the **Search Command** field, enter the name of the function to which you want to assign a key command, and select it.
3. Click the **click here** field, and press the key that you want to use as a key command.

   You can press individual keys or a combination of one or several of the modifier keys **Ctrl/Cmd**, **Alt/Opt**, **Shift** plus any key.

RESULT

The key command is assigned.

NOTE

To assign an additional key to the same function, click **Assign Additional Key**, and press the key. Adding a key command to a function that already has another key command assigned to it does not replace the previously defined key command.

Searching for Key Commands or Assignments

In the **Key Commands** dialog, you can search for Cubase functions or for assignments.

PROCEDURE

1. Select **Edit** > **Key Commands**.
2. Do one of the following:
   - Activate **Press Key/Search Command**, and press a key to verify if it is already assigned to a command.
   - Deactivate **Press Key/Search Command**, and in the **Search Command** field, enter the name of a Cubase function to verify if a key is already assigned to it.

RESULT

The key commands list is filtered to show the corresponding command and/or the key.

RELATED LINKS
Press Key/Search Command on page 1095

Removing Key Command Assignments

PROCEDURE

1. Select **Edit** > **Key Commands**.
2. In the **Command** list, open a category folder, and select the function whose key command assignment you want to remove.
3. Select the key command in the list, and click **Remove Key Command** to the right of the function.
4. Click **Remove** to confirm your choice.

Adding Macros

You can set up a combination of several functions or commands to be performed as a macro.

PROCEDURE

1. Select **Edit** > **Key Commands**.
2. Open the macros section.
3. Click **New Macro**.
4. In the macros section, double-click the new macro, enter a name for it, and press **Return** to confirm it.
5. In the key command section, select the first command you want to include in the macro.
6. In the macros section, click **Add Command**.

   NOTE

   Commands are added to the macros list after the selected command. You can change the order of the commands by clicking **Move Command Up in Macro** or **Move Command Down in Macro**.
7. In the key commands section, select the next command, and click **Add Command**.

RESULT

The new macro is added. You can select it from the **Macros** submenu of the **Edit** menu.

NOTE

You can also assign key commands to a macro. Macros are shown in the **Macro** category.

RELATED LINKS
Macros Section on page 1096

Saving Key Command Presets

You can save key command settings as presets.

PREREQUISITE

You have set up the key commands to your liking.

PROCEDURE

1. From the **Presets** pop-up menu, select **Save Preset**.
2. Enter a name for the preset, and click **OK**.

RESULT

Your key commands settings are now available as a preset on the **Presets** pop-up menu.

Loading Key Command Presets

You can load key command presets.

PROCEDURE

- Open the **Presets** pop-up menu, and select the preset.

RESULT

The new key command preset replaces the previous key command settings and macros.

Exporting Key Command Assignments

You can export a file that lists all key command assignments.

PROCEDURE

1. Select **File** > **Export** > **Key Command Assignments**.
2. In the file dialog, choose a location, and enter a file name.
3. Click **Save**.

RESULT

The key command assignments are exported as an **.html** file.

Resetting Key Commands

You can reset customized key commands to their default state.

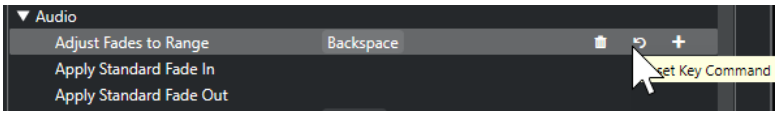
IMPORTANT

If you reset key commands, any changes you made to the default key commands are lost. To be able to revert to these settings again, save them first.

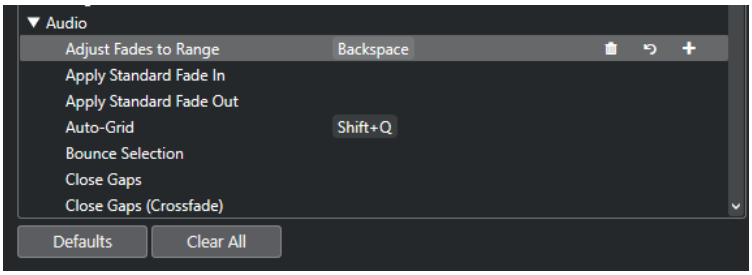
PROCEDURE

1. Optional: In the **Key Commands** dialog, click **Customized** to show only the key commands that were changed and can be reset.

2. Do one of the following:
   - To reset a key command, select it in the key commands section, and click **Reset Key Command**.



   - To reset all key commands, click **Defaults**, and confirm with **Reset All**.



RESULT

The key commands are reset.

Default Key Commands

The default key commands are arranged in categories.

NOTE

When the **On-Screen Keyboard** is displayed, the usual key commands are blocked because they are reserved for the **On-Screen 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/Opt** - **K** (Show/Hide On-Screen Keyboard).

Add Track Category

Option	Key command
Add Track	**T**

Audio Category

Option	Key command
Adjust Fades to Range	**A**
Auto-Grid	**Shift** - **Q**
Crossfade	**X**

Automation Category

Option	Key command
Read Automation for All Tracks On/Off	**Alt/Opt** - **R**
Write Automation for All Tracks On/Off	**Alt/Opt** - **W**

Chords Category

Option	Key command
Show/Hide Chord Pads	**Ctrl/Cmd** - **Shift** - **C**

Devices (Studio) Category

Option	Key command
Audio Connections	**F4**
Audio Performance	**F12**
MixConsole	**F3**
MixConsole in Project Window	**Alt/Opt** - **F3**
On-Screen Keyboard	**Alt/Opt** - **K**
Video Player	**F8**
VST Instruments	**F11**

Direct Offline Processing Category

Option	Key command
Direct Offline Processing	**F7**

Edit Category

Option	Key command
Activate/Deactivate Focused Object	**Alt/Opt** - **A**

Option	Key command
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/Opt** - **E**
Find Track/Channel	**Ctrl/Cmd** - **F**
Group	**Ctrl/Cmd** - **G**
Insert Silence	**Ctrl/Cmd** - **Shift** - **E**
Invert	**Alt/Opt** - **F**
Invert Selection	**Ctrl/Cmd** - **Alt/Opt** - **I**
Left Selection Side to Cursor	**E**
Lock	**Ctrl/Cmd** - **Shift** - **L**
Move Event Starts to Cursor	**Ctrl/Cmd** - **L**
Move Events to Front	**U**
Mute	**M**
Mute Events	**Shift** - **M**
Mute/Unmute Objects	**Alt/Opt** - **M**
Open	**Ctrl/Cmd** - **E**
Paste	**Ctrl/Cmd** - **V**
Paste at Origin	**Alt/Opt** - **V**
Paste Relative to Cursor	**Shift** - **V**

Option	Key command
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/Opt** - **X**
Split Range	**Shift** - **X**
Stationary Cursor	**Alt/Opt** - **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/Opt** - **S**

Marker Category

Option	Key command
Add Position Marker on Active Track	**Insert**

Media Category

Option	Key command
Open MediaBay	**F5**
Open/Close Attribute Inspector	**Ctrl** - **Alt/Opt** - **Num 6**
Open/Close Favorites	**Ctrl** - **Alt/Opt** - **Num 8**

Option	Key command
Open/Close File Browser	**Ctrl** - **Alt/Opt** - **Num 4**
Open/Close Filters	**Ctrl** - **Alt/Opt** - **Num 5**
Open/Close Previewer	**Ctrl** - **Alt/Opt** - **Num 2**
Preview Cycle On/Off	**Shift** - **Num /**
Preview Start	**Shift** - **Enter**
Preview Stop	**Shift** - **Num 0**
Search MediaBay	**Shift** - **F5**

MIDI Category

Option	Key command
Show/Hide Controller Lanes	**Alt/Opt** - **L**

MixConsole History Category

Option	Key command
Undo MixConsole Step	**Alt/Opt** - **Z**
Redo MixConsole Step	**Alt/Opt** - **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**

Option	Key command
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**
Left: Select previous 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
Left	**Ctrl/Cmd** - **Left Arrow**
Right	**Ctrl/Cmd** - **Right Arrow**
Nudge Bottom Down	**Alt/Opt** - **Down Arrow**

Option	Key command
Nudge Bottom Up	**Alt/Opt** - **Shift** - **Up Arrow**
Nudge End Left	**Alt/Opt** - **Shift** - **Left Arrow**
Nudge End Right	**Alt/Opt** - **Right Arrow**
Nudge Start Left	**Alt/Opt** - **Left Arrow**
Nudge Start Right	**Alt/Opt** - **Shift** - **Right Arrow**
Nudge Top Down	**Alt/Opt** - **Shift** - **Down Arrow**
Nudge Top Up	**Alt/Opt** - **Up Arrow**

Project Category

Option	Key command
Colors	**Alt/Opt** - **Shift** - **S**
Open Markers	**Ctrl/Cmd** - **M**
Open Pool	**Ctrl/Cmd** - **P**
Open Tempo Track	**Ctrl/Cmd** - **T**
Remove Selected Tracks	**Shift** - **Delete**
Set Track/Event Color	**Alt/Opt** - **Shift** - **C**
Setup	**Shift** - **S**

Quantize Category

Option	Key command
Quantize	**Q**

Set Insert Length Category

Option	Key command
1/1	**Alt/Opt** - **1**

Option	Key command
1/2	**Alt/Opt** - **2**
1/4	**Alt/Opt** - **3**
1/8	**Alt/Opt** - **4**
1/16	**Alt/Opt** - **5**
1/32	**Alt/Opt** - **6**
1/64	**Alt/Opt** - **7**
1/128	**Alt/Opt** - **8**
Toggle Dotted	**Alt/Opt** - **.**
Toggle Triplet	**Alt/Opt** - **,**

Tool Category

Option	Key command
Combine Selection Tools On/Off	**Alt/Opt** - **Shift** - **1**
Draw Tool	**8**
Drumstick Tool	**0**
Erase Tool	**5**
Glue Tool	**4**
Mute Tool	**7**
Next Tool	**F10**
Object Selection Tool	**1**
Play Tool	**9**
Previous Tool	**F9**
Range Selection Tool	**2**
Split Tool	**3**

Option	Key command
Zoom Tool	**6**

Track Versions 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 External Sync	**Alt/Opt** - **Shift** - **T**
Activate Metronome	**C**
Activate Punch In	**I**
Activate Punch Out	**O**
Cycle	**Num /**
Enter Left Locator	**Shift** - **L**
Enter Locator Range Duration	**Shift** - **D**
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**
Enter Time Signature	**Shift** - **C**
Exchange Time Formats	**.**

Option	Key command
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**
Locate Next Event	**N**
Locate Next Hitpoint	**Alt/Opt** - **N**
Locate Next Marker	**Shift** - **N**
Locate Previous Event	**B**
Locate Previous Hitpoint	**Alt/Opt** - **B**
Locate Previous Marker	**Shift** - **B**
Locate Selection Start	**L**
Locators to Selection	**P**
Loop Selection	**Alt/Opt** - **P**
MIDI Retrospective Record: Insert from All MIDI Inputs	**Shift** - **Num -** - *****
Nudge Cursor Left	**Ctrl/Cmd** - **Num -**
Nudge Cursor Right	**Ctrl/Cmd** - **Num +**
Play Selection Range	**Alt/Opt** - **Space**
Recall Cycle Marker 1 to 9	**Shift** - **Num 1** to **Num 9**
Record	**Num ***
Rewind	**Num -**
Set Left Locator to Project Cursor Position	**Ctrl/Cmd** - **Num 1**
Set Marker 1	**Ctrl/Cmd** - **1**

Option	Key command
Set Marker 2	**Ctrl/Cmd** - **2**
Set Marker 3 to 9	**Ctrl/Cmd** - **Num 3** to **Num 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 **Num 9** or **Shift** - **3** to **9**

Window Zones Category

Option	Key command
Show/Hide Left Zone	**Ctrl/Cmd** - **Alt/Opt** - **L** or **Alt/Opt** - **I**
Show/Hide Channel Left Zone	**Ctrl/Cmd** - **Alt/Opt** - **C**
Show/Hide Right Zone	**Ctrl/Cmd** - **Alt/Opt** - **R**
Show/Hide Lower Zone	**Ctrl/Cmd** - **Alt/Opt** - **E** or **Ctrl/Cmd** - **Alt/Opt** - **B**
Show/Hide Transport Zone	**Ctrl/Cmd** - **Alt/Opt** - **T**
Show Previous Tab	**Ctrl/Cmd** - **Alt/Opt** - **Left Arrow**
Show Next Tab	**Ctrl/Cmd** - **Alt/Opt** - **Right Arrow**
Show Previous Page	**Ctrl/Cmd** - **Alt/Opt** - **Up Arrow** or **Page Up**
Show Next Page	**Ctrl/Cmd** - **Alt/Opt** - **Down Arrow** or **Page Down**
Show/Hide Info Line	**Ctrl/Cmd** - **I**
Show/Hide Overview	**Alt/Opt** - **O**

Workspaces Category

Option	Key command
New	**Ctrl/Cmd** - **Num 0**
No Workspace	**Alt/Opt** - **Num 0**
Update Workspace	**Alt/Opt** - **U**
Workspace 1-9	**Alt/Opt** - **Num 1** - **Num 9**
Workspace X	**Ctrl/Cmd** - **Alt/Opt** - **Num 0**

Zoom Category

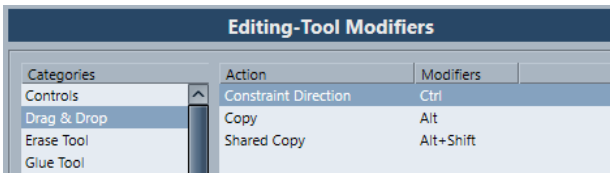
Option	Key command
Zoom Full	**Shift** - **F**
Zoom In	**H**
Zoom In On Waveform Vertically	**Alt/Opt** - **H**
Zoom In Tracks	**Ctrl/Cmd** - **Down Arrow**
Zoom In Vertically	**Shift** - **H**
Zoom Out	**G**
Zoom Out Of Waveform Vertically	**Alt/Opt** - **G**
Zoom Out Tracks	**Ctrl/Cmd** - **Up Arrow**
Zoom Out Vertically	**Shift** - **G**
Zoom to Event	**Shift** - **E**
Zoom to Selection	**Alt/Opt** - **S**
Zoom Tracks Exclusive	**Z**

Setting up Tool Modifier Keys

You can set up tool modifier keys that allow you to access an alternative function when using a tool.

PROCEDURE

1. In the **Preferences** dialog, select **Editing** > **Tool Modifiers**.



2. Select an option from the **Categories** list, and locate the action for which you want to edit the modifier key.
3. In the **Action** list, select the action.
4. Hold down the desired modifier keys, and click **Assign**.

   NOTE

   If the modifier keys you pressed are already assigned to another tool, you can choose to overwrite them. If you do so, this leaves the other tool without any modifier keys assigned to it.

5. Click **OK**.

RESULT

The modifier keys for the action are replaced.

Customizing

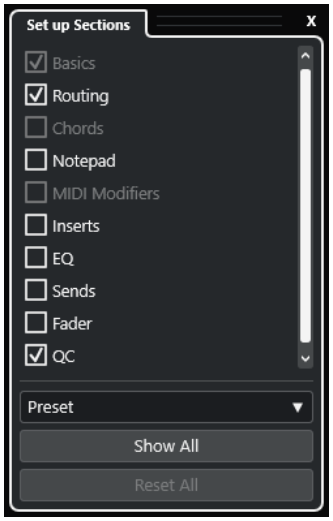
In Cubase, you can organize windows and dialogs in workspaces, and set up the appearance of specific elements.

RELATED LINKS
Setup Panes on page 1114
Workspaces on page 1115

Setup Panes

Setup panes are available for the **Transport** panel, the toolbars, the info lines, or the **Inspector**. They allow you to specify which elements are visible/hidden and in what order they are shown. You can save and recall setup presets.

- To configure the sections for the **Inspector**, for example, right-click an empty area of the **Inspector**, and select **Set up Sections**.



Section options

Activate/Deactivate the option for the section that you want to show/hide.

Preset

Allows you to save the settings as presets.

Show All

Shows all sections.

Reset All

Allows you to restore the default settings.

NOTE

You can change the order of the sections by dragging them up or down in the list.

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 via 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 to 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 previous project is used when you create a new project.
- In the **Preferences** dialog (**General** page), you can choose a view to use when you open a project.

RELATED LINKS
Open Projects in Last Used View on page 1139

Workspace Types

You can create global workspaces or project workspaces.

Global Workspaces

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 Workspaces

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.

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 most recently 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 original layout of the project from the project workspaces on the **Workspaces** menu or in the **Workspace Organizer**.

- In the **Preferences** dialog (**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 1117
Open Projects in Last Used View on page 1139

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

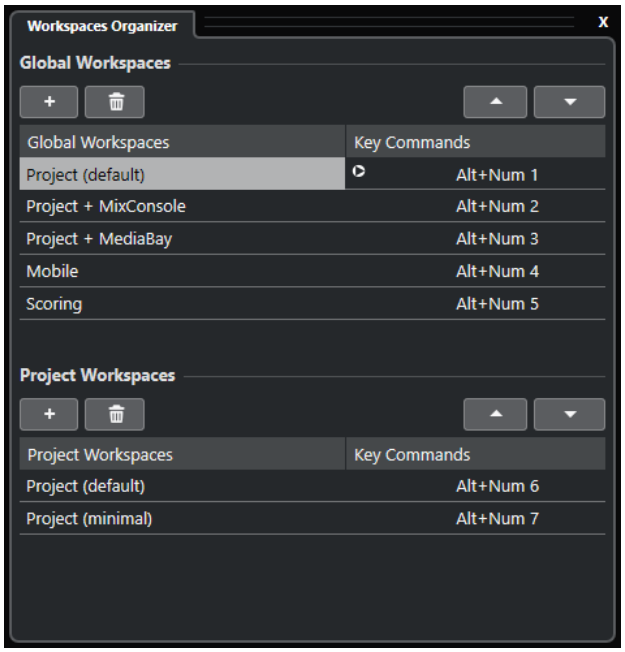
1. On the **Workspaces** menu, select the workspace that you want to modify.
2. Make your changes as required.
3. On the **Workspaces** menu, select one of the following:
   - To update your current workspace, click **Update Workspace**.
   - To save your workspace as a different workspace or workspace type, click **Add Workspace**.

RELATED LINKS
Creating Workspaces on page 1116

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 allows you to 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:

Add

Allows you to create a new workspace using the **New Workspace** dialog.

Delete

Deletes a selected workspace.

Move Up

Moves a workspace up by one position.

Move Down

Moves a workspace down by one position.

NOTE

- You can also click and drag a workspace to another position within a list.
- You can only move workspaces within a list. To turn a global workspace into a project workspace and vice versa, you must save it as a different type of workspace.
- To rename a workspace, double-click the workspace name.

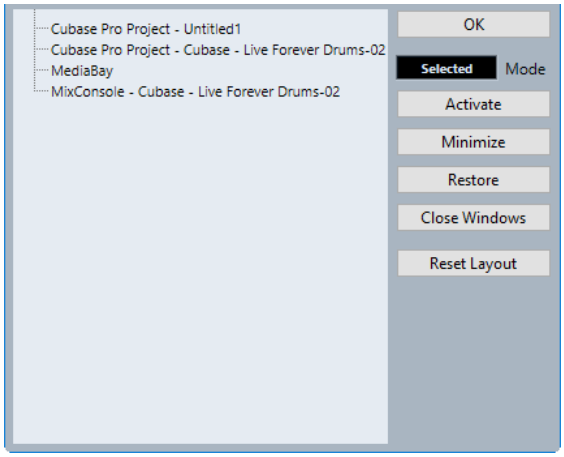
RELATED LINKS

Workspaces Category on page 1112

Windows Dialog

The **Windows** dialog allows you to manage open windows in Cubase.

- To open the **Windows** dialog, select **Window** > **Windows**.



The dialog lists all open dialogs, windows, and editors. The following options are available:

OK

Closes the dialog.

Mode

Allows you to select a mode that affects the function.

- **Selected**

  Affects the selected window only.

- **Cascaded**

  Affects also the associated windows, such as the editors of a project window, for example.

- **All**

  Affects all windows.

Activate

Activates the selected window.

Minimize

Minimizes the selected or all windows.

Restore

Restores the selected or all windows.

Close Windows

Closes the selected or all windows.

Reset Layout

Resets the layout of the selected window.

Where are the Settings Stored?

You have many different options for customizing Cubase at your disposal. 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 in another studio, for example, 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 save a backup copy of your preference files, once you have established your desired setup. This ensures that, 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\<user name>\AppData\Roaming\Steinberg\<program name>\`.

  On the Start menu, you will find a shortcut to this folder for easy access.
- On macOS, preference files are stored in the following location: `/Library/Preferences/<program name>/` under your home directory.

  The full path is: `/Users/<user name>/Library/Preferences/<program name>/`.

NOTE

The RAMpresets.xml file, which contains various presets settings, is saved on exiting the program.

NOTE

Program functions that are not used in the project, such as crossfade, or configurations, such as panels, are not stored.

Updating from a Previous Version of Cubase

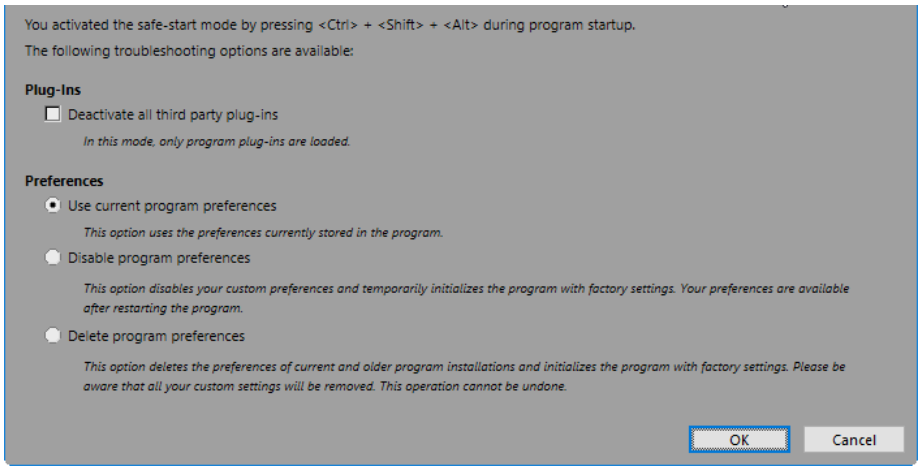
If you are updating from Cubase 6 or higher, most of the customized settings of your previous installation are automatically transferred to the new Cubase version.

If your previous Cubase version is older than Cubase 6, its settings are discarded, and the default settings of the new version of Cubase are applied.

Safe Mode Dialog

The **Safe Mode** dialog offers options for troubleshooting.

- To open the **Safe Mode** dialog, launch Cubase, and hold down **Ctrl/Cmd** - **Shift** - **Alt/Opt**.



The following options are available in the **Plug-Ins** section:

Deactivate all third-party plug-ins

Temporarily disables all third-party plug-ins. After startup, only Steinberg plug-ins are available.

The following options are available in the **Preferences** section:

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. This affects all versions of Cubase installed on your computer.

RELATED LINKS
Disabling Third-Party Plug-ins on page 1121
Disabling the Preferences on page 1120

Disabling the Preferences

Inconsistent **Preferences** settings can prevent Cubase from working properly. If you experience any issues related to this, save your project, and relaunch Cubase. Disable or delete the current **Preferences**, and reset the settings to the factory defaults.

PROCEDURE

1. Quit Cubase.
2. Launch Cubase, and hold down **Ctrl/Cmd** - **Alt/Opt** - **Shift**.
3. In the **Preferences** section of the **Safe Start Mode** dialog, activate one of the troubleshooting options.
   - **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.

4. Click **OK**.

AFTER COMPLETING THIS TASK

If the program works fine with the preferences disabled, consider deleting and re-initializing the preferences.

RELATED LINKS

Safe Mode Dialog on page 1119
Preferences on page 1126

Disabling Third-Party Plug-ins

If Cubase does not start or if a project does not load, it is highly probable, that this is due to a third-party plug-in. To check if this is the case, disable third-party plug-ins on startup.

PROCEDURE

1. Quit Cubase.
2. Launch Cubase, and hold down **Ctrl/Cmd** - **Alt/Opt** - **Shift**.
3. In the **Plug-Ins** section of the **Safe Start Mode** dialog, activate **Deactivate all third-party plug-ins**.
4. Click **OK**.

RESULT

Only Steinberg plug-ins are available after startup, and third-party plug-ins are temporarily disabled.

RELATED LINKS

Safe Mode Dialog on page 1119

Optimizing Audio Performance

To fully benefit from all the capacities of your Cubase system in terms of audio performance, you can optimize specific settings.

NOTE

For details and current information on system requirements and hardware properties, refer to the Steinberg web site.

Performance Aspects

Tracks and Effects

The faster your computer, the more tracks, effects, and EQs you are able to play. An accurate definition of what constitutes a fast computer is almost a science in itself, but some hints are given below.

Short Response Times (Latency)

One important aspect of performance is response time. The term “latency” refers to the buffering, that is, the temporary storing of small chunks of audio data at various stages of the recording and playback processes on a computer. The larger those chunks, and the more there are, 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 only heard 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 affect regular performance. A badly written driver can reduce the performance of your computer. However, when it comes to latency, the choice of a suitable hardware driver can make all the difference.

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 macOS, audio hardware with properly written macOS (Core Audio) drivers can be very efficient and produces 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 transmitted 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 **Studio** > **Studio Setup**.
2. From the **Devices** list, select your audio hardware driver.
3. Click **Control Panel**.
4. Do one of the following:
   - Windows: Adjust the buffer size in the dialog that opens.
   - macOS: Adjust the buffer size in the **CoreAudio Device Settings** dialog.

Multi Processing

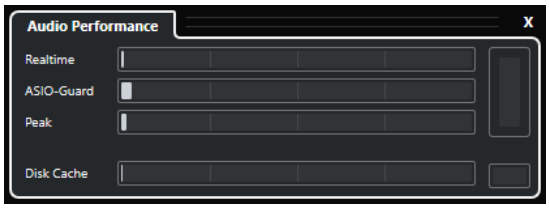
Multi processing distributes the processing load evenly to all available CPUs, allowing Cubase to make full use of the combined power of the multiple processors.

Multi processing is activated by default. You can find the setting in the **Studio Setup** dialog (**Audio System** page).

Audio Performance Panel

The **Audio Performance** panel shows the audio processing load and the hard disk transfer rate. This allows you to ensure that you do not run into performance problems when adding effects or plug-ins, for example.

- To open the **Audio Performance** panel, select **Studio** > **Audio Performance**.



Realtime

Shows the average load of all audio realtime processes.

ASIO-Guard

Shows the average load of processes that can be preprocessed.

NOTE

Preprocessing only takes effect if you activate **Activate ASIO-Guard** on the **Audio System** page of the **Studio Setup** dialog.

Peak

Shows the processing load in the real-time path of the audio engine. The higher this value, the higher the risk that dropouts occur.

Processing Overload

The overload indicator on the top right indicates dropouts. Dropouts occur if the processing load exceeds 100% or if the audio engine is restarted due to the internal detection of excessive processing delay. For example, this can occur if the preprocessing buffer runs empty as a result of the real-time load exceeding the limits.

If the overload indicator 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 Cache

Shows the hard disk transfer load.

Disk Cache Overload

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 Selected Tracks** to reduce the number of tracks playing back. If this does not help, you need a faster hard disk. To reset the overload indicator, click its display. In the **Audio Performance** category of the **Key Commands**, you can also assign a key command for this.

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.

RELATED LINKS

Audio System Page on page 18
ASIO-Guard on page 1125
Audio Performance Meter on page 43
Transport Panel Sections on page 224

ASIO-Guard

The ASIO-Guard allows you to shift as much processing as possible from the ASIO real time 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 real time. This leads to fewer dropouts, the capacity 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 of live input.

Restrictions

The ASIO-Guard cannot be used for:

- Real-time-dependent signals
- External effects and instruments

NOTE

If you select **Studio** > **VST Plug-in Manager** and click **Show VST 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 instrument, or a VST instrument channel, the audio channel and all dependent channels are automatically switched from ASIO-Guard to real-time processing and vice versa. This results in a gentle fade out and fade in of the audio channel.

RELATED LINKS
VST 2 Plug-in Path Settings on page 685
Audio Performance Panel on page 1123

Activating the ASIO-Guard

PROCEDURE

1. Select **Studio** > **Studio Setup**.
2. From the **Devices** list, select **Audio System**.
3. Activate the **Activate ASIO-Guard** option.

   NOTE

   This option is only available if you activate **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.

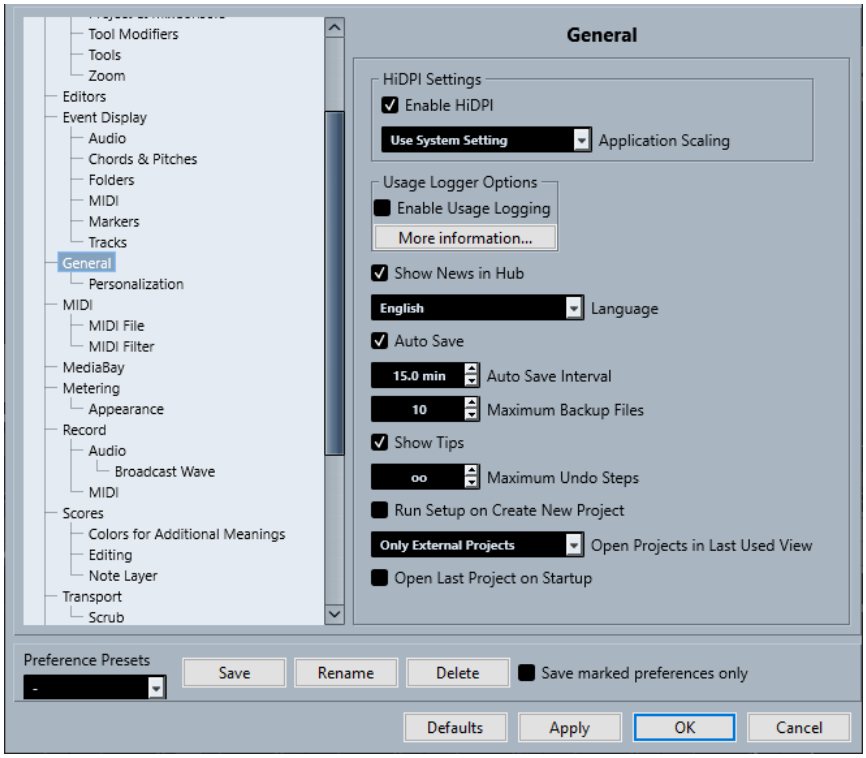
Preferences

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 **Edit** > **Preferences**.



In addition to the settings, the dialog provides the following options:

Preference Presets

Allow you to select a saved preference preset.

Save

Allows you to save the current preferences as a preset.

Rename

Allows you to rename a preset.

Delete

Allows you to delete a preset.

Save marked preferences only

Allows you to select which pages to include in the preset.

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 Preference Presets

You can save complete or partial preference settings as presets.

PROCEDURE

1. In the **Preferences** dialog, make your changes.
2. Click **Save** in the lower left section of the dialog.
3. Enter a preset name, and click **OK**.

RESULT

Your settings are now available on the **Preference Presets** pop-up menu.

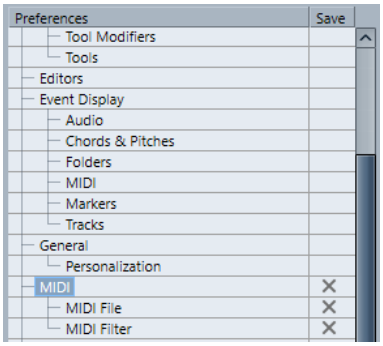
Saving Partial Preference Settings

You can save partial preference settings. This is useful in case you have made settings that only pertain to a certain project or situation, for example. By applying a saved partial preference preset, you only change the saved settings. All other preferences are left unchanged.

PROCEDURE

1. In the **Preferences** dialog, make your changes.
2. Activate **Save marked preferences only**.

   In the preferences list, the **Save** column is shown.



3. Click in the **Save** column of the preference pages that you want to save.
4. Click **Save** in the lower left section of the dialog.
5. Enter a preset name, and click **OK**.

RESULT

Your settings are now available from the **Preference Presets** pop-up menu.

Editing

'Edit Solo'/'Record in MIDI Editors' Follow Focus

Suspends **Record in Editor** and **Solo Editor** in the MIDI editor if the **Project** window gets the focus.

Default Track Time Type

Allows you to select the default track time type for new tracks.

- **Musical**

  Sets new tracks to the musical time base.

- **Time Linear**

  Sets new tracks to the linear time base.

- **Follow Transport Main Display**

  Sets new tracks to follow the primary time format: **Bars+Beats** format sets new tracks to the musical time base. **Seconds**, **Timecode**, **Samples**, etc. sets new tracks to the linear time base.

Display Warning before Deleting Non-Empty Tracks

Shows a warning if you delete tracks that are not empty.

Select Track on Background Click

Allows you to select a track by clicking in the event display background.

Auto Select Events under Cursor

Automatically selects all events that are under the project cursor in the **Project** window or in an editor.

Cycle Follows Range Selection

Sets the left locator to the range start position and the right locator to the range end position of a range selection.

Delete Overlaps

Deletes overlapped, that is, hidden, sections of overlapping events. Hold **Shift** while moving events to override this setting.

Parts Get Track Names

Automatically changes event names to the name of the track they are moved to.

Lock Event Attributes

Determines which properties are affected when you lock an event. You can use any combination of the following:

- **Position**

  Locks the position so that the event cannot be moved.

- **Length**

  Locks the length so that the event cannot be resized.

- **Other**

  Locks all other editing of the event. This includes adjusting the fades and event volume, processing, etc.

Use Up/Down Navigation Commands for Selecting Tracks only

Uses the **Up Arrow** / **Down Arrow** keys for track selection, not for event/part selection.

Track Selection Follows Event Selection

Automatically selects the corresponding track if you select an event in the **Project** window.

Automation Reduction Level

Allows you to remove all superfluous automation events. 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.

Show Automation Track in Project on Writing Parameter

Reveals the automation track on writing automation parameters. This is useful if you want to have a visual control of all parameters changed on writing.

Automation Follows Events

Causes automation events to automatically follow when you move, duplicate, copy, or paste 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.

Drag Delay

Allows you to set up a delay in ms that is used when you move events. This is useful to avoid accidentally moving events when you click on them in the **Project** window.

Editing - Audio

Treat Muted Audio Events like Deleted

Allows you to play the hidden event of 2 overlapping audio events when you mute the top event.

Use Mouse Wheel for Event Volume and Fades

Allows you to use the mouse wheel to move event volume and fades.

- Moving the mouse wheel moves the event volume curve up or down.
- Holding down **Shift** while moving the mouse wheel moves the fade curves.
- Positioning the mouse in the left half of the event moves the end point of the fade in.
- Positioning the mouse in the right half of the event moves the start point of the fade out.

On Import Audio Files

Determines what happens when you import an audio file.

- **Open Options Dialog**

  Opens a dialog where you can select whether you want to copy the file to the audio folder and/or convert it to the project settings.

- **Use Settings**

  Uses the default settings for importing audio.

Remove Regions/Hitpoints on all Offline Processes

Removes regions/hitpoints of audio ranges when you perform offline processing.

On Processing Shared Clips

Determines what happens when you apply processing to a shared clip that is used by more than one event in the project.

- **Open Options Dialog**

  Opens the **Options** dialog that allows 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**

  Creates a new editing version of the clip and applies the processing to that version, leaving the original clip unaffected.

- **Process Existing Clip**

  Applies the processing to the existing clip. All events playing that clip are affected.

Enable Automatic Hitpoint Detection

Enables the automatic hitpoint detection for imported or newly recorded audio files.

Time Stretch Tool Algorithm

Sets the default algorithm that is applied when you use the **Object Selection** tool in **Sizing Applies Time Stretch** mode.

Default Warping Algorithm

Sets the warp algorithm for new audio clips in the project.

Editing - Chords

'X' Chords Mute Notes on Tracks That are in Follow Chord Track Mode

Mutes playback when you play back a track that follows the chord track and the cursor reaches an undefined chord event (X chord).

Disable 'Acoustic Feedback' during Playback

Disables **Acoustic Feedback** during playback. This ensures that chord events are not triggered twice.

Hide Muted Notes in Editors

Hides notes that are muted because of their MIDI track following the chord track.

Editing - Controls

Value Box/Time Control Mode

Allows you to select your preferred way of controlling value fields.

- **Text Input on Left-Click**

  Clicking opens a value box for editing.

- **Increment/Decrement on Left/Right-Click**

  Clicking decreases the value, right-clicking increases the value. Double-clicking allows you to enter values manually.

- **Increment/Decrement on Left-Click and Drag**

  Clicking and dragging up or down adjusts the value. Double-clicking allows you to enter values manually.

Knob Mode

Allows you to select your preferred way of controlling knobs.

- **Circular**

  Clicking and dragging in a circular motion changes the setting. Clicking anywhere along the edge of the encoder immediately changes the setting.

- **Relative Circular**

Clicking anywhere on an encoder and dragging changes the current setting. There is no need to click at the exact position.

- **Linear**

  Clicking on an encoder and dragging up or down, or left or right, changes the setting.

Slider Mode

Allows you to select your preferred way of controlling value sliders.

- **Jump**

  Clicking anywhere on a slider instantly moves the slider handle to that position.

- **Touch**

  Clicking and dragging the actual slider handle adjusts the setting.

- **Ramp**

  Clicking and dragging a slider causes the handle to move smoothly to the new position.

- **Relative**

  Clicking and dragging up or down changes the setting according to how far you drag, not according to where you click.

Editing - MIDI

Select Controllers in Note Range: Use Extended Note Context

Takes the extended note context into account when you move notes in conjunction with their controllers. This means that controllers between the most recently selected note and the following note or the end of the part are also moved.

Legato Overlap

Allows you to set an overlap for the **Legato** function. **Legato** allows you to extend MIDI notes so that they reach the next notes.

An overlap setting of 0 ticks causes each selected note to extend so that it reaches the next note exactly. A positive value causes the notes to overlap by the specified number of ticks. A negative value causes a slight gap between the notes.

Legato Mode: Between Selected Notes Only

Adjusts the length of selected notes so that they reach the next selected note.

Split MIDI Events

Splits MIDI events when you split a MIDI part in the **Project** window and the split position intersects the MIDI events. This also creates new notes at the beginning of the second part.

Split MIDI Controllers

Splits MIDI controllers when you split a MIDI part in the **Project** window and the part contains a controller. If the controller value at the split position is not zero, a new controller event of the same type and value is inserted at the split position at the beginning of the second part.

NOTE

If you just split a part and play back the result, it sounds 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.

High Resolution Display Range

Allows you set up the display range for velocity, control change, pan, aftertouch, poly pressure, and pitchbend values.

High Resolution Decimal Count

Allows you set up the number of decimal places for velocity, control change, pan, aftertouch, poly pressure, and pitchbend values.

Editing - Project & MixConsole

Select Channel/Track on Solo

Selects channels/tracks when you click their **Solo** button.

Select Channel/Track on Edit Settings

Selects channels/tracks when you click their **Edit Channel Settings** button.

Scroll to Selected Track

Scrolls the track list when you select a **MixConsole** channel and the respective track is out of view.

Scrolling: Disable Mouse Wheel for Parameter Change

Allows you to scroll the channel sections in the **MixConsole** and in the **Channel** tab of the **Project** window by using the mouse wheel. If this is activated, you cannot use the scroll wheel to make parameter changes.

Sync Selection in Project Window and MixConsole

Synchronizes the selection in the **Project** window and the **MixConsole**.

Enable Record on Selected MIDI Track

Record-enables MIDI tracks when you select them.

Enable Record on Selected Audio Track

Record-enables audio tracks when you select them.

Enable Solo on Selected Track

Solos tracks when you select them.

Deep Track Folding

Applies the **Track Folding** functions to all subelements of the tracks.

Enlarge Selected Track

Enlarges a track when you select it. If you select a different track, this track is enlarged, and the previously selected track is displayed in its original size.

Editing - Tool Modifiers

The default tool modifiers are arranged in categories.

Categories	Action	Modifiers
Controls	Reset to Default Value	**Ctrl/Cmd**

Categories	Action	Modifiers
Drag & Drop	Constraint Direction	**Ctrl/Cmd**
	Copy	**Alt/Opt**
	Shared Copy	**Alt/Opt** - **Shift**
Draw Tool	Rename Marker Event	**Shift**
Erase Tool	Delete later events	**Alt/Opt**
Glue Tool	Glue All Following Events	**Alt/Opt**
Info Line	All Events Same Value	**Ctrl/Cmd**
Range Tool	Exclude Row	**Ctrl/Cmd**
	Select Full Vertical	**Ctrl/Cmd** - **Shift**
Select Tool	Edit Velocity	**Ctrl/Cmd** - **Shift**
	Set Cursor Position	**Alt/Opt** - **Shift**
	Slip Event Content	**Ctrl/Cmd** - **Alt/Opt**
	Split Event	**Alt/Opt**
Size Objects	All Events Same Value	no default assignment
	Disable Snapping	**Ctrl/Cmd**
	Repeat Event	**Alt/Opt**
	Size with Fade	**Ctrl/Cmd** - **Alt/Opt**
	Time Stretch	no default assignment
Split Tool	Split repeated	**Alt/Opt**
Trim Tool	Constrain Direction	**Ctrl/Cmd**
	Trim Start	**Alt/Opt**

Editing Tool Modifiers

You can edit the default tool modifier keys.

PROCEDURE

1. Select an option from the **Categories** list.
2. Select the action whose modifier keys you want to edit in the **Action** list.
3. On your computer keyboard, hold down the modifier keys, and click **Assign**.

RESULT

The current modifier keys are replaced. If this tool already has assigned modifier keys, you are prompted to replace them.

Editing - Tools

Show Toolbox on Right-Click

Opens a toolbox when you right-click in the event display and editors. To open the context menu instead of the toolbox, press any modifier key when right-clicking.

Cross-Hair Cursor

Allows you to set up the colors for the line of the cross-hair cursor, as well as its width. You can also show an outline for the cross-hair cursor.

Range Selection Cursor

Allows you to set up the colors for the line of the range selection cursor, as well as its width. You can also show an outline for the range selection cursor.

Select Tool: Show Extra Info

Displays the current pointer position and the name of the track and event at which you are pointing when you use the **Object Selection** tool in the **Project** window event display.

Show Notification when Switching Tool Mode with Key Command

Shows a notification when you switch the tool mode by using a key command.

Editing - Zoom

Quick Zoom

Only redraws the contents of parts and events once you have stopped changing the zoom. This is useful if screen redraws are slow on your system.

Use Selection Start as Zoom Anchor

Activate this to use the selection start as an anchor when zooming with the horizontal zoom sliders or the corresponding key commands. If this is deactivated, the project cursor position is used as an anchor instead.

Zoom while Locating in Time Scale

Allows you to zoom in or out by clicking in the ruler and dragging down or up.

Zoom Tool Standard Mode: Horizontal Zooming Only

Zooms the window horizontally without changing the track height when you zoom with the **Zoom** tool.

Editors

Use Drum Editor when Drum Map is assigned

Shows drum note symbols in parts on MIDI tracks to which drum maps are assigned. The parts automatically open in the **Drum Editor** on double-click. This overwrites the **Default MIDI Editor** setting.

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**. This setting is overwritten for tracks with drum maps if **Use Drum Editor when Drum Map is assigned** is activated.

Editor Content Follows Event Selection

Open editors show the events that are selected in the **Project** window.

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.

Event Display

The **Event Display** section contains several settings for customizing the display in the **Project** window.

Show Event Names

Shows the names on parts and events.

Hide Truncated Event Names

Hides event names if they are too long.

Show Overlaps

Determines how overlapping events are displayed.

Grid Overlay Intensity

Sets the overlay intensity of the displayed grid lines.

Event Handling Opacity

Sets the opacity of overlying events when you move them.

Event Opacity

Sets the opacity of the event background.

NOTE

- If you reduce the event opacity, it might be helpful to increase the **Waveform Brightness** for audio events or the **Note Brightness** for MIDI events.
- Reducing the opacity may result in a less responsive user interface.

Smallest Track Height to Show Data

Determines from which track height the track contents are displayed.

Smallest Track Height to Show Name

Determines from which track height the track names are displayed.

RELATED LINKS
Waveform Brightness on page 1136
Note Brightness on page 1138

Event Display - Audio

Append Clip Name to Event Name

Appends the clip name in brackets to the displayed event name.

Interpolate Audio Waveforms

Interpolates sample values to form curves when you zoom in to one sample per pixel or less.

Show Event Volume Curves Always

Shows event volume curves, regardless of whether the event is selected.

Show Waveforms

Shows waveforms for audio events.

Show Hitpoints on Selected Events

Shows hitpoints for selected audio events.

Waveform Brightness

Sets the brightness of the waveform.

Waveform Outline Intensity

Sets the intensity of the waveform outline.

Fade Handle Brightness

Sets the brightness of the fade lines for audio events.

Background Color Modulation

Reflects the waveform dynamics in the background of audio waveforms.

Event Display - Chords & Pitches

Pitch Notation

- **Note Name**

  Allows you to select how chord symbols are displayed. You can choose **English**, **German**, or **Solfège**.

- **Naming Format**

  Allows you to determine how MIDI note names are displayed in editors, etc.

- **Display 'Bb' as 'B'**

  Displays 'B' as a pitch name. This is only available if you selected **English** in the **Note Name** pop-up menu.

- **Display 'B' as 'H'**

  Displays 'H' as a pitch name. This is only available if you selected **English** in the **Note Name** pop-up menu.

- **Enharmonics from Chord Track**

  Uses the chord events on the chord track to determine if enharmonically equivalent notes in the **Key Editor** and in the **List Editor** are displayed as sharp or flat.

Chord Font

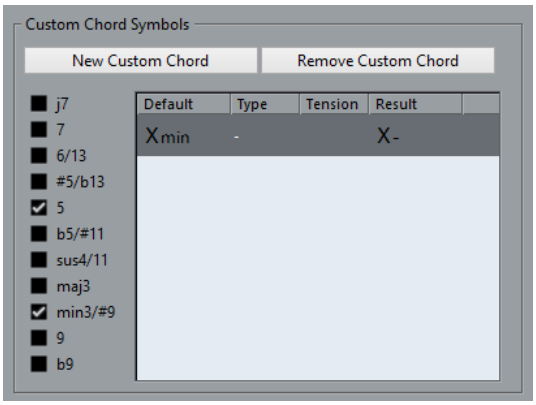
Allows you to specify a font for all chord symbols.

Chord Symbols

Allows you to select your preferred display method for major 7th chords, minor chords, half-diminished chords, diminished chords, and augmented chords.

Custom Chord Symbols

Allows you to modify the default chord symbols that are used on the chord track, for the chord pads, and in the **Score Editor**.



- **New Custom Chord** 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** column, and enter your custom symbol.

  NOTE

  You must define custom symbols for each set of tensions.

- The **Result** column offers a preview of the chord display.
- 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

Displays event details instead of data blocks.

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**

  Always displays data blocks or event details.

- **Never Show Data**

  Displays nothing.

- **Hide Data When Expanded**

  Hides the display of events when you open folder tracks.

Event Display - MIDI

Part Display

Part Data Mode

Determines if and how events in MIDI parts are shown. This setting is overwritten for tracks with drum maps if **Use Drum Editor when Drum Map is assigned** is activated.

Show Controllers

Shows non-note events such as controllers, etc. in MIDI parts.

Note Brightness

Sets the brightness of note events.

Controller Brightness

Sets the brightness of controller events.

Event Display in Editor

Inactive Note Event Intensity

Allows you to set the intensity for inactive note events.

RELATED LINKS
Use Drum Editor when Drum Map is assigned on page 1134

Event Display - Tracks

Default Track Name Width

Sets the default name width for all track types.

General

The **General** page contains general settings that affect the program user interface. You can set the parameters so that they suit your working style.

Enable HiDPI (Windows only)

Enables the appropriate resolution to ensure that the display of the Cubase user interface is sharp and precise on high resolution displays with supported scaling factors of 100%, 125%, 150%, 175%, and 200%.

NOTE

Other scaling factors, such as 133%, are not supported.

The **Application Scaling** menu allows you to scale the Cubase user interface relative to the Windows system scaling setting.

NOTE

On macOS, you can disable HiDPI support in the Cubase application folder by invoking **Get Info** and checking **Open in Low Resolution**.

Usage Logger Options

If you activate this option, Cubase gathers usage information and writes it in a log file that you can find at the following location:

- On Windows: `\Users\<user name>\AppData\Local\Steinberg\usagelogger`

  On macOS: `/Users/<user name>/Library/Logs/Steinberg/usagelogger`

Activating this option to write such a file and then sending the file to the Steinberg support team can be useful if Cubase crashes and the crash dump files do not reveal enough information.

By default, **Enable Usage Logging** is deactivated. We recommend that you deactivate it when you no longer need it.

Show News in Hub

Allows you to show/hide the **News** section in the **Hub**.

Language

Allows you to select the language displayed in the application. After switching the language, you must restart Cubase for the change to take effect.

Auto Save

Automatically saves backup copies of all open projects with unsaved changes. The backup files are named `Name.bak`, where "Name" corresponds to the name of the project. The backup copies are saved in the project folder. Backup copies of unsaved projects are named `#UntitledX.bak`, where "X" is an incremental number, so you can save 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 the number of backup files to be created. As soon as the maximum number of backup files is reached, the existing files are overwritten, starting with the oldest file.

Show Tips

Displays an explanatory tooltip when you position the mouse pointer over an icon or button in Cubase.

Maximum Undo Steps

Allows you to specify the number of undo steps.

Run Setup on Create New Project

Opens the **Project Setup** dialog, every time you create a new project.

Open Projects in Last Used View

Allows you to determine which window layout and settings are used when you open a project on this computer.

- **Never**

  All projects are opened with the window layout as when they were saved.

- **Only External Projects**

  Projects from a different computer are opened with the last window layout used on this computer. Projects from this computer are opened with the window layout as when they were saved.

- **Always**

  All projects are opened with the last window layout used on this computer.

Open Last Project on Startup

Opens the most recently saved project when you start Cubase.

RELATED LINKS
Cubase Hub on page 95

General - Personalization

Default Author Name

Allows you to specify an author name that is used by default for new projects. This is 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 is included as metadata when exporting audio files with an iXML chunk.

MIDI

This page contains settings that affect MIDI recording and playback.

MIDI-CI Support

Allows you to enable automatic detection and setup of MIDI-CI devices.

MIDI Thru Active

Sets all MIDI tracks that are record-enabled or have monitoring activated to 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 the **Local Off** mode on your MIDI instrument to prevent each note from sounding twice.

Reset on Stop

Sets Cubase to send out MIDI reset messages, including note-off and controller resets, on stop.

Never Reset Chased Controllers

Never resets controllers to 0 when you stop playback or move to a new position in the project.

Length Adjustment

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 gap 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

Chases event types for which one of the chase options is activated when you locate to a new position and start playback. This makes your MIDI instruments sound as intended 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 under 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 like positioning and soloing.

MIDI Display Resolution

Allows you to set the display resolution for viewing and editing MIDI data.

Extend Playback Range of Notes that start before the Part

Extends the playback range of MIDI notes that start before the part in ticks. This is useful if MIDI events start shortly before the start of the MIDI part. If you do not extend the playback range, these events are not played. This setting is also taken into account during cycle playback.

Insert Reset Events after Record

Inserts a reset event at the end of each recorded part. This resets controller data, such as **Sustain**, **Aftertouch**, **Pitchbend**, **Modulation**, or **Breath Control**. This is useful if you stop recording before the note-off command is sent, for example.

Audition through MIDI Inserts/Sends

Activates the layering of MIDI instruments (by MIDI sends) also 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

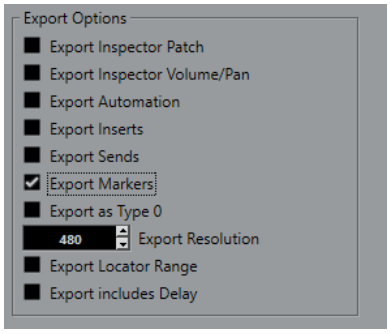
Allows you to set the maximum length of the notes when using **Acoustic Feedback** in MIDI editors.

MIDI - MIDI File

This page allows you to make settings for exporting and importing MIDI Files.

Export Options

These options allow you to specify what data is included in exported MIDI files.



Export Inspector Patch

Includes MIDI patch settings in the **Inspector** as MIDI bank select and program change events in the MIDI file.

Export Inspector Volume/Pan

Includes volume and pan settings in the **Inspector** as MIDI volume and pan events in the MIDI file.

Export Automation

Includes automation as MIDI controller events in the MIDI file. This also includes automation recorded with the **MIDI Control** plug-in.

If you record a continuous controller (CC 7, for example) and deactivate **Read Automation** for the automation track, only the part data for this controller is exported.

Export Inserts

Includes MIDI modifiers and MIDI inserts in the MIDI file.

Export Sends

Includes MIDI sends in the MIDI file.

Export Markers

Includes markers as standard MIDI file marker events in the MIDI file.

Export as Type 0

Exports a type 0 MIDI file with all data on a single track, but on different MIDI channels. If you deactivate this option, a type 1 MIDI file with data on separate tracks is exported.

Export Resolution

Allows you to set 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 based on the application or sequencer to be used, because certain applications and sequencers may not be able to handle certain resolutions.

Export Locator Range

Exports only the range between the left and the right locator.

Export includes Delay

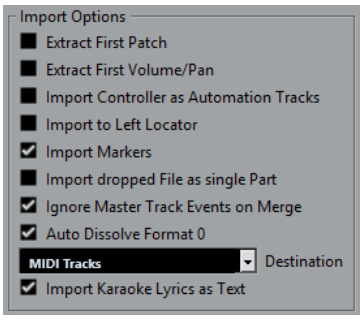
Includes delay settings you have made in the MIDI file via the **Inspector**.

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

The **Import Options** for MIDI files allow you to specify what data to include in imported MIDI files.



Extract First Patch

Converts the first **Program Change** and **Bank Select** events for each track to **Inspector** settings for the track.

Extract First Volume/Pan

Converts the first **MIDI Volume** and **Pan** events for each track to **Inspector** settings for the track.

Import Controller as Automation Tracks

Converts **MIDI Controller** events in the MIDI file to automation data for the MIDI tracks.

Import to Left Locator

Aligns the imported MIDI file to the position of the left locator.

Import Markers

Imports Standard MIDI File Markers in the file and converts them to Cubase markers.

Import Dropped File as Single Part

Places the file on one track if you drag a MIDI file into the project.

Ignore Master Track Events on Merge

Ignores tempo track data if you import a MIDI file into the current project. The imported MIDI file adapts to the current tempo track in the project.

Auto Dissolve Format 0

Automatically dissolves imported MIDI files of type 0. Each embedded MIDI channel in the file is placed on a separate track in the **Project** window.

Destination

Allows you to specify what happens when you drag a MIDI file into the project.

- **MIDI Tracks** creates MIDI tracks for the imported file.
- **Instrument Tracks** creates instrument tracks for each MIDI channel in the MIDI file and causes the program to automatically load appropriate presets.
- **HALion Sonic multi-timbral** creates several MIDI tracks, each routed to a separate instance of HALion Sonic in the **VST Instruments** window, and loads the appropriate presets.

Import Karaoke Lyrics as Text

Converts 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

Prevents the corresponding type of MIDI message from being recorded. It will, however, be thruput, and if already recorded, play back normally.

Thru

Prevents the corresponding type of MIDI message from being thruput. It will, however, be recorded and played back normally.

Channels

Prevents MIDI messages on that MIDI channel from being recorded or thruput. Already recorded messages are, however, played back normally.

Controller

Prevents 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 is shown 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

Maximum Items in Results List

Sets the maximum number of files that are displayed in the **Results** list.

Allow Editing in Results List

Enables editing of attributes in the **Results** list.

Show File Extensions in Results List

Displays file name extensions in the **Results** list.

Scan Folders Only When MediaBay Is Open

Scans for media files when the **MediaBay** window is open.

NOTE

During playback or recording no folder scans are performed.

Scan Unknown File Types

Scans all file types.

Metering

Map Input Bus Metering to Audio Track (in Direct Monitoring)

Maps 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 **Studio Setup** dialog.

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.

Meters' Peak Hold Time

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

Allows you to specify how quickly the meters in the **MixConsole** return to lower values after signal peaks.

Metering - Appearance

This page allows you to assign colors to level meter values to quickly identify what levels are reached.

Add

Adds a color handle to the top of the meter.

Remove

Removes the selected color handle.

RELATED LINKS
Setting up Meter Colors on page 367

Record

This page contains settings related to audio and MIDI recording.

Deactivate Punch In on Stop

Deactivates **Punch In** on the **Transport** panel whenever you enter stop mode.

Stop after Automatic Punch Out

Stops playback after automatic **Punch Out**. 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

Sets 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 4 GB

Determines what happens if you record wave files that are larger than 4 GB.

- To split the wave file, select **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 an RF64 file, select **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

Creates and displays a waveform image during the recording process.

NOTE

This real-time calculation uses some extra processing power.

Record - Audio - Broadcast Wave

This page allows you to specify the **Description**, **Author**, and **Reference Value** 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, and AIFF files.

Record - MIDI

Record-Enable allows MIDI Thru

Prevents record-enabled MIDI or instrument tracks from echoing incoming MIDI data. This way record-enabled tracks to which a VST instrument is assigned do not play doubled notes.

Snap MIDI Parts to Bars

Lengthens recorded MIDI parts so that they start and end at whole bar positions. If you are working in a context that is based on bars and beats, this can make editing, such as moving, duplicating, and repeating, easier.

MIDI Record Catch Range in ms

Ensures that the very start of a recording that starts at the left locator is included.

Retrospective Record Buffer Size in Events

You can capture MIDI data that you played in **Stop** mode or during playback and turn them into a MIDI part. **Retrospective Record Buffer Size** determines how much MIDI data can be captured in the buffer.

ASIO Latency Compensation Active by Default

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.

Add Latency to MIDI-Thru Processing

If you set the audio buffer size to a high value, and you play an arpeggiator in real time, for example, the MIDI notes are output with an increased latency.

If you consequently adapt your playing to the output latency, the notes are recorded even later. To minimize this effect, you can activate **Add Latency to MIDI-Thru Processing**. This adds a regular latency to each note that is played in real time.

Replace Recording in Editors

Affects the result of recording in a MIDI editor when **Replace** mode is selected as a record mode:

- **None**

  Nothing is replaced.

- **Controller**

  Only controller data is replaced, not notes.

- **All**

  Replace mode works as usual. Notes and controllers are replaced when recording.

Transport

This page contains options related to playback, recording, and positioning.

Playback Toggle Triggers Local Preview

Allows you to use **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**, **Space** still toggles the global project playback.

Show Timecode Subframes

Shows subframes for all frame-based display formats.

User-definable Frame Rate

Allows you to set the frame rate for the ruler display format **User**.

Stop Playback while Winding

Stops playback when you click **Rewind** or **Forward** on the **Transport** panel.

Wind Speed Options

These options affect the forward/rewind speed.

- **Adjust to Zoom** adapts the wind speed to the horizontal zoom factor.

  If you zoom in very close for detailed editing, you probably do not want to have a high forward/rewind speed. Because of this, the **Speed Factor** does not have any effect in this mode. The **Fast Wind Factor** still applies.

- **Fixed** keeps a fixed wind speed regardless of the horizontal zoom factor.
- **Speed Factor** allows you 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.

- **Fast Wind Factor** allows you to set the winding speed to a multiple for fast winding.

  If you press **Shift** while 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.

Cursor

Allows you to set up the colors for the line of the cursor, as well as its width. You can also show an outline for the cursor.

Clicking Locator Range in Upper Part of the Ruler Activates Cycle

Allows you to activate/deactivate cycle mode when you click the locator range in the upper part of the ruler.

Locate when Clicked in Empty Space

Allows you to move the project cursor by clicking in an empty area of the **Project** window.

Transport - Scrub

Scrub Tool Volume

Sets the playback volume for the **Scrub** tool in the **Project** window and audio editors.

NOTE

This does not affect the scrub volume controlled by any connected hardware.

Use High Quality Scrub Mode

Enables effects for scrubbing and uses a higher resampling quality. However, scrubbing will be more demanding on the processor.

Use Inserts While Scrubbing

Allows you to activate insert effects for scrubbing with the shuttle speed control. By default, insert effects are bypassed.

User Interface

This page contains options that allow you to adjust the default user interface colors.

Color Schemes

Allows you to adjust the color scheme for the application and the desktop cover.

- Click the **Custom Color Scheme** field to open the **Color Picker**, and select one of the colors in the **Default Colors** section to apply a pre-defined color.
- Click the color field for a specific item to open the **Color Picker** and select a custom color for it.

Track & MixConsole Channel Colors

Allows you to set the **Auto Track/Channel Color Mode**, to colorize track controls and **MixConsole** channel controls, and to determine the brightness of selected channels.

Track Type Default Colors

Allows you to set the colors for the different track types.

MixConsole Fader Colors

Allows you to set the colors for the level faders of the channel types in the **MixConsole**.

MixConsole Section Colors

Allows you to set the colors for the channel sections in the **MixConsole**.

MixConsole Channel Strip Colors

Allows you to set the colors for the channel strips in the **MixConsole**.

Customizing the User Interface Colors

You can change the color of the Cubase desktop, the track types, the **Project** window, the editor elements, and **MixConsole** elements.

PROCEDURE

1. In the **Preferences** dialog, select **User Interface** > **Color Schemes**.
2. Click **Custom Color Scheme** and in the **Color Picker**, select a new color.

RESULT

The color scheme is instantly applied.

User Interface - Track & MixConsole Channel Colors

Allows you to set the **Auto Track/Channel Color Mode** to colorize track controls and channel faders, and to determine the brightness of selected channels.

Auto Track/Channel Color Mode

Allows you to set an automatic color assignment mode for new tracks or new channels.

Use Track Default 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 **Use Previous Track Color**, except that 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

New tracks get random track colors.

Colorize Tracks and MixConsole Channels

Applies the track/channel color to track/channel controls.

Selection Brightness

Allows you to adjust the brightness of the selected **MixConsole** channel.

Tracks

Enables the application of the track color to the track controls.

Folder Tracks

Enables the application of the folder track color to the track controls.

MixConsole Channels

Enables the application of the **MixConsole** channel color to the channel controls.

Color Strength

Allows you to adjust the intensity of the color.

Show Color for Selected Channel

Colorizes the selected channel and increases its color intensity instead of displaying it in gray.

VST

This page contains settings for the VST audio engine.

Warn if real time mixdown is required in order to include external plug-in

Shows a warning if a realtime mixdown is required.

Connect Sends Automatically for Each Newly Created Channel

Automatically connects the send routing for existing FX channels when you create a new audio or group channel.

Instruments use Automation Read All and Write All

If you activate this, the **Read** and **Write** automation status in control panels for VST instruments is affected by **Activate/Deactivate Read for All Tracks** and **Activate/Deactivate Write for All Tracks**.

Mute Pre-Send when Mute

Mutes pre-fader sends when you mute their channels.

Default Send Level

Allows you to specify a default level for your send effects.

Group Channels: Mute Sources as well

Mutes channels that are directly routed to a group channel when you mute the group channel. Channels that were muted prior to the group channel being muted do not remember their mute status and are unmuted when the group channel is unmuted.

NOTE

This does not have an impact on how mute automation is written.

Delay Compensation Threshold (for Recording)

Minimizes the latency effects of the delay compensation while maintaining the sound of the mix to the greatest possible extent. Only plug-ins with a delay higher than this threshold setting are affected by the **Constrain Delay Compensation** function. By default, this is set to 0.0 ms, which means that all plug-ins are affected. If you feel that a little latency is acceptable, you can raise this threshold value.

NOTE

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 real time or record live audio (with monitoring through Cubase activated), this delay compensation may result in added latency.

Do Not Connect Input/Output Busses When Loading External Projects

Prevents connecting input and output busses to the ASIO ports of your system when loading external projects.

Warn on Channel Configuration Change

Shows a warning if the channel configuration is changed.

Auto Monitoring

Determines how Cubase handles monitoring. The following options are available:

- **Manual**

  Turns input monitoring on or off when you click **Monitor**.
- **While Record-Enabled**

  Connects the audio source to the channel input when you click **Record Enable**.
- **While Record Running**

  Switches to input monitoring during recording only.
- **Tapemachine Style**

Activates input monitoring in stop mode and during recording, but not during playback.

NOTE

The automatic monitoring options apply when you monitor through Cubase or when you use ASIO Direct Monitoring. If you monitor externally (that is, if you listen to the input signal from an external mixer, for example), select **Manual** mode, and keep all audio **Monitor** buttons turned off in Cubase.

Warn on Processing Overloads

Shows a warning if the **Processing Overload** indicator on the **Transport** panel lights up during recording.

VST - Plug-ins

Warn before Removing Modified Effects

Shows a warning if you remove an effect plug-in for which you have made parameter changes.

Open Effect Editor after Loading It

Opens the effect control panel when you load VST effects or VST instruments.

Create MIDI Track when Loading VSTi

Allows you to determine if a MIDI track is created when you add a rack instrument.

- **Always**

  A MIDI track is always created.
- **Do not**

  No MIDI track is created.
- **Always ask to**

  You are asked whether a corresponding MIDI track should be created.

Synchronize Plug-in Program Selection to Track Selection

Synchronizes track and plug-in program selection if you route multiple MIDI tracks to multitimbral instruments.

Suspend VST 3 plug-in processing when no audio signals are received

Suspends VST plug-in processing in passages where no audio is passing through the plug-in. This can noticeably improve system performance.

NOTE

We recommend to leave this option deactivated.

Plug-in Editors “Always on Top”

Always shows the control panels for effect plug-ins and VST instruments on top of other windows.

VariAudio

Inhibit warning when changing the Sample Data

Inhibits the message that warns you when you modify audio material that is used in several places in the project.

Inhibit warning when applying Offline Processes

Inhibits the message that warns you when you apply offline processes to audio material that is used in several places in the project.

Video

Extract Audio on Import Video File

Extracts and saves the audio data of imported video files as a separate audio clip.

Thumbnail Memory Cache Size

Allows you to set the size of the thumbnail cache.

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