Operation Manual

CUBASE
ELEMENTS 8
Personal Music Production System

CUBASE AI 8
Integrated Music Production Software

CUBASE LE 8
Music Production Software

steinberg

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This PDF provides improved access for vision-impaired users. Please note that due to the complexity and number of images in this document, it is not possible to include text descriptions of images.

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Introduction

About the Program Versions

The documentation covers two different operating systems, Windows and Mac OS X. Some features and settings are specific to one of the platforms.

This is clearly stated in the applicable cases. If nothing else is said, all descriptions and procedures in the documentation are valid for both Windows and Mac OS X.

The screenshots are taken from the Windows version of Cubase.

Typographical Conventions

Many of the default key commands in Cubase use modifier keys, some of which are different depending on the operating system. For example, the default key command for Undo is [Ctrl]-[Z] on Windows and [Command]-[Z] on Mac OS X.

When key commands with modifier keys are described in this manual, they are shown with the Windows modifier key first, in the following way:

- [Win modifier key]/[Mac modifier key]-[key]

For example, [Ctrl]/[Command]-[Z] means "press [Ctrl] on Windows or [Command] on Mac OS X, then press [Z]".

Similarly, [Alt]/[Option]-[X] means "press [Alt] on Windows or [Option] on Mac OS X, then press [X]".

NOTE

This manual often refers to right-clicking, for example, to open context menus. If you are using a Mac with a single-button mouse, hold down [Ctrl] and click.

Setting Up Your System

Setting Up Audio

IMPORTANT

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

Simple Stereo Input and Output Setup

If you only use a stereo input and output from Cubase, you can connect your audio hardware, for example, the inputs of your audio card or your audio interface, directly to the input source and the outputs to a power amplifier and speaker.
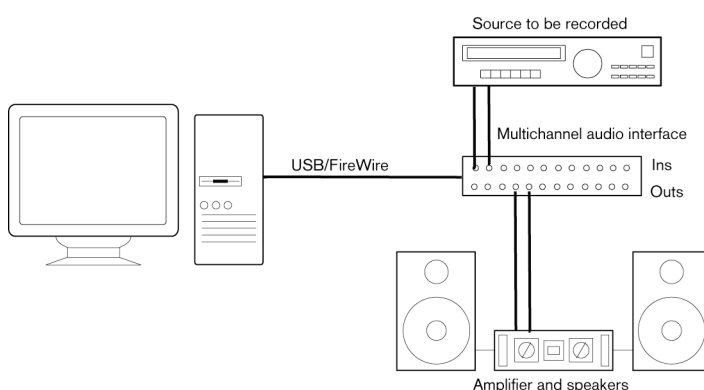
Once you have set up the internal input and output busses, you can connect your audio source, for example a microphone, to your audio interface and start recording.

Connecting Audio

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

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

About Recording Levels and Inputs

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

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

IMPORTANT

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

Word Clock Connections

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

IMPORTANT

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

Selecting a Driver

You must select the correct driver in Cubase to make sure that the program can communicate with the audio hardware.

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, refer to your audio hardware manufacturer about available ASIO driver. You can use the Generic Low Latency ASIO driver if no specific ASIO driver is available.

When you start Cubase, a dialog opens that prompts you to select a driver. You can also select your audio hardware driver in the following way.

PROCEDURE

1.   Launch Cubase and select **Devices > Devices Setup**.
2.   In the devices list, select **VST Audio System**.

3.   On the **ASIO Driver** menu, select your audio hardware driver.

     The selected driver is added to the devices list.

4.   In the devices list, select the driver to open the driver settings for your audio hardware.

5.   Open the control panel for the audio hardware in the following way:
     ▪   On Windows operating systems, click the **Control Panel** button.
     ▪   On Mac OS X operating systems, click the **Open Config App** button.
         This button is available only for some hardware products. If it is not available in your setup, refer to the documentation of your audio hardware for information on where to make hardware settings.

     NOTE

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

6.   Make the settings as recommended by the audio hardware manufacturer.

7.   Click **Apply**.

8.   Click **OK**.

RELATED LINKS

Using Audio Hardware with a DirectX Driver (Windows only)

A DirectX driver is an alternative to a specific ASIO driver and the Generic Low Latency ASIO driver.

Cubase comes with the ASIO DirectX Full Duplex driver.

▪   To select the driver, select **Devices > Device Setup > VST Audio System** and open the **ASIO Driver** menu.

When the ASIO DirectX Full Duplex driver is selected, you can open **ASIO DirectX Full Duplex Driver** from the **Devices List**, and click **Control Panel** button. On the **Control Panel** for the driver, the following settings are available:

Direct Sound Output and Input Ports

Lists all available Direct Sound output and input ports. To activate/deactivate a port in the list, click the checkbox in the left column.

Buffer Size

Allows you to edit the buffer size. Audio buffers are used when audio data is transferred between Cubase and the audio card. Larger buffers ensure that playback occurs without glitches, but larger buffers also increase the latency.

Offset

Allows you to adjust the output or input latency time, if a constant offset is audible during playback of audio and MIDI recordings.

Audio Channels

Lists the available audio channels.

Bits Per Sample

Shows the number of bits per sample.

Sync Reference

Shows if the driver is used as sync reference.

NOTE

To take advantage of DirectX Full Duplex driver, the audio hardware must support Windows Driver Model (WDM).

Using Hardware that is Based on an External Clock Source

For proper audio playback and recording, you must set the sample rate of the project to the sample rate of the incoming clock signals. If you are using an external clock source, Cubase must be notified that it receives external clock signals and derives its speed from that source.

PROCEDURE

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

RESULT

Cubase accepts the sample rate mismatch, and playback is therefore faster or slower.

When a sample rate mismatch occurs, the **Record Format** field on the status line is highlighted in a different color.

Using Several Audio Applications Simultaneously

If you want to use several audio applications simultaneously, you must allow other applications to play back via your audio hardware even though Cubase is running.

PROCEDURE

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

RESULT

The application that is currently active gets access to the audio hardware.

NOTE

Make sure that any other audio application accessing the audio hardware is also set to release the ASIO or Mac OS X driver.

Setting Up Busses

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 understand the bus system and know how to set up the busses properly, you can continue with recording, playing back, and mixing.

RELATED LINKS
VST Connections on page 17

Configuring the Audio Hardware

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

This includes:

- Selecting which inputs/outputs are active.

- Setting up word clock synchronization (if available).

- 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.

In most cases, the settings for the audio hardware are 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.

Plug and Play Support for ASIO Devices

The Steinberg UR824 hardware series supports plug and play in Cubase. These devices can be plugged in and switched on while the application is running. Cubase automatically uses the driver of the UR824 series and re-maps the VST connections accordingly.

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

IMPORTANT

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

Setting Up the 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.

PROCEDURE

1. Select **Devices > Device Setup**.
2. In the **Device Setup** dialog, select your driver from the **Devices** list on the left.
3. Make your settings.
4. Optional: To hide a port, click its **Visible** column.

   IMPORTANT

   Hiding a port disconnects it.

   Ports that are not visible cannot be selected in the **VST Connections** window where you set up your input and output busses.
5. Optional: To rename a port, click its name in the **Show as** column and type in a new name.
6. Click **OK**.

About Monitoring

In Cubase, monitoring means listening to the input signal while preparing to record or 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.

Setting Up MIDI

IMPORTANT

Turn off all equipment before making any connections.

PROCEDURE

1. Connect your MIDI equipment (keyboard, MIDI interface, etc.) to your computer.

2. Install the drivers for your MIDI equipment.

RESULT

You can use your MIDI equipment in Cubase.

About MIDI Ports

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

Connect the MIDI output port of your MIDI device to the MIDI input port of your computer. 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 computer. This way, you can send MIDI data from Cubase to the MIDI device. For example, you can record your own playing, edit the MIDI data in Cubase, and then play it back on the keyboard and record the audio that is coming out of the keyboard for a better edited performance.

Showing or Hiding MIDI Ports

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

PROCEDURE

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

2. In the **Device Setup** dialog, select **MIDI Port Setup** from the **Devices** list on the left.

3. To hide a MIDI port, deactivate its **Visible** column.

4. Click **OK**.

Setting Up All MIDI Inputs

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

PROCEDURE

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

2. In the **Device Setup** dialog, select **MIDI Port Setup** from the **Devices** list on the left.

3. Activate **In 'All MIDI Inputs'** for a port.

    NOTE

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

4. Click **OK**.

RESULT

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

Connecting a Synchronizer

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

IMPORTANT

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

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

RELATED LINKS

Setting Up Video

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

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

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

NOTE

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

RELATED LINKS

Video on page 585
Video Output Devices on page 587

VST Connections

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

VST Connections Window

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

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

Inputs/Outputs Tab

The **Input** and **Output** tabs allow you to set up and configure input and output busses.
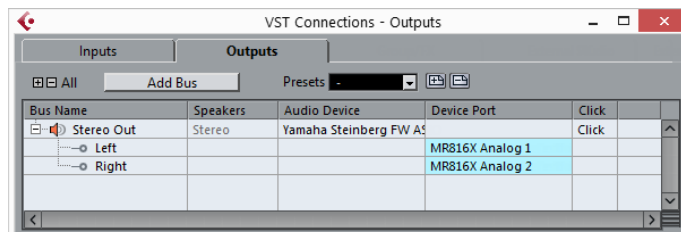
The following options are available above the bus list:

+- All

Expands/Collapses all busses in the bus list.

Add Bus

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

Presets

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

The following columns are available for the bus list:

Bus Name

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

Speakers

Indicates the speaker configuration (mono, stereo) of each bus.

Audio Device

Shows the currently 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 Adat 1 port is already assigned to three stereo busses plus two additional busses.

Click (Outputs tab only)

You can route the metronome click to a specific output bus.

Renaming the Hardware Inputs and Outputs

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

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

NOTE

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

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

2. On the **VST Audio System** page, make sure that the correct driver for your audio hardware is selected.

   If this is the case, your audio card is listed in the **Devices** list on the left of the **Device Setup** window.

3. In the devices list, select your audio card.

   The available input and output ports on your audio hardware are listed on the right.

4. In the **Show As** column, click on a port name and enter a new name.

5. Repeat the previous step until you have renamed all required ports.

6. Click **OK**.

RELATED LINKS

Hiding Ports

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

PROCEDURE

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

2. In the devices list, select your audio card.

3. In the **Visible** column, deactivate the ports that you want to hide.

4. Click **OK**.

Activating and Deactivating Ports (Mac only)

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

NOTE

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

PROCEDURE

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

2. In the devices list, select your audio card.

3. Click the **Control Panel** button.

4.   Activate/Deactivate ports.

5.   Click **OK**.

Adding Input and Output Busses

PROCEDURE

1.   In the **VST Connections** dialog, click the **Inputs** or **Outputs** tab.

2.   Click **Add Bus**.

     The **Add Input Bus** dialog opens.

3.   Configure the bus.

4.   Optional: Enter a name for the bus.

     If you do not specify a name, the bus is named according to the channel configuration.

5.   Click **Add Bus**.

     The new bus is added to the bus list.

6.   For each of the speaker channels in the bus, click in the **Device Port** column and select a port of your audio hardware.

Setting the Default Output Bus (Main Mix)

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

PREREQUISITE

Add an output bus.

PROCEDURE

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

2.   Select **Set as Main Mix**.

RESULT

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

Presets for Input and Output Busses

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

- A number of standard bus configurations.

- Automatically created presets tailored to your specific hardware configuration.

  On startup, Cubase analyzes the physical inputs and outputs that are provided by your audio hardware and creates a number of hardware-dependent presets.

- Your own presets.

Saving a Bus Configuration Preset

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

PROCEDURE

1. Select **Devices > VST Connections**.
2. Set up your bus configuration.
3. Click **Store** ⊞.
   The **Type in Preset Name** dialog opens.
4. Enter a name.
5. Click **OK**.

RESULT

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

Deleting a Bus Configuration Preset

PROCEDURE

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

RESULT

The preset is deleted.

About Monitoring

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

Editing the Bus Configurations

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

Removing Busses

PROCEDURE

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

Changing Port Assignments

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

- To change a port assignment, click in the **Device Port** column of a bus and select a new port.

- To assign different ports to the selected busses, open the **Device Port** pop-up menu for the first selected entry, press [Shift], and select a device port.
  All subsequent busses are automatically connected to the next available port.

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

Renaming Multiple Busses

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

- To use incrementing numbers, select the busses that you want to rename and enter a new name for one of the busses, followed by a number.

  For example, if you have eight inputs that you want to be named "In 1, In 2, …, In 8", you select all the busses and enter the name `In 1` for the first bus. All other busses are then renamed automatically.

- To use letters from the alphabet, select the busses that you want to rename and enter a new name for one of the busses, followed by a space and a capital letter.

  For example, if you have three FX channels that you want to be named "FX A, FX B, and FX C", you select all the channels and enter the name `FX A` for the first. All other channels are renamed automatically. The last letter that can be used is Z. If you have more selected entries than there are letters available, the remaining entries are skipped.

NOTE

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

Identifying Exclusive Port Assignments

For certain channel types, the port assignment is exclusive.

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

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

Project Window

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

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

- To open a project, select **File > Open**.

- To create a new project, select **File > New Project**.
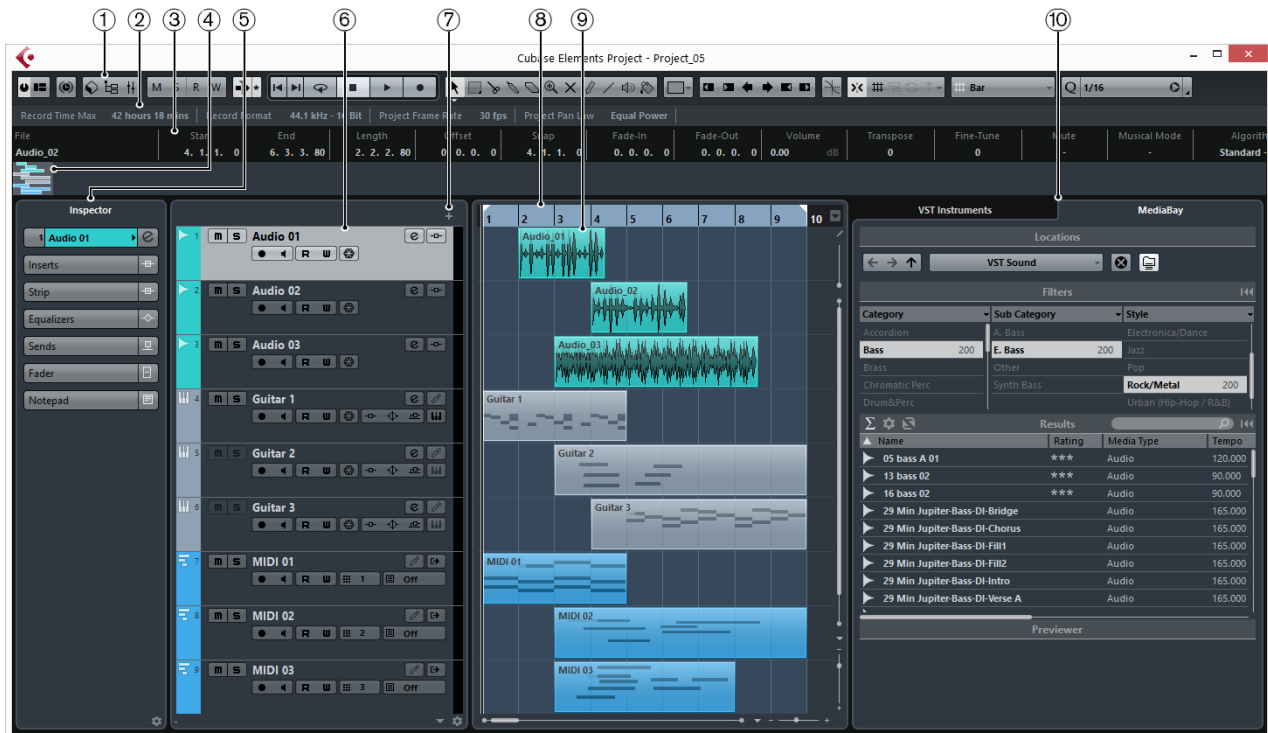
The **Project** window is divided into several sections:

1) **Toolbar**

   Holds tools and shortcuts for opening other windows and various project settings and functions.

2) **Status Line**

   Shows the most important project settings.

3) **Info Line**

   Shows information about the currently selected event or part in the Project window.

4) **Overview Line**

Shows events and parts as boxes and allows you to zoom and navigate in the project.

5) **Inspector**

Shows controls and parameters for the first selected track.

6) **Track List**

Shows the track types and their controls.

7) **Add Track**

Allows you to add a new track.

8) **Ruler**

Shows the timeline and the display format of the project.

9) **Event Display**

Shows the parts and events of the project.

10) **Racks**

Shows the **MediaBay**.

Toolbar

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

- To display all toolbar elements, right-click in an empty area of the toolbar and select **Show All**.

The following options are available:

Activate Project

Allows you to activate a project.

Set up Window Layout

Allows you to show or hide the sections Inspector, status line, info line, and overview line.

Constrain Delay Compensation

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

Media & MixConsole Windows

These buttons allow you to open or close the MediaBay, the Pool, and the MixConsole.

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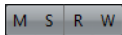
These buttons show the mute, solo, listen, and automation states.

Auto-Scroll

Allows you to activate the **Auto-Scroll** and **Suspend Auto-Scroll when Editing** options. These determine if the waveform display is scrolled during playback.

Transport Buttons

Shows the transport controls.

Arranger Controls (Cubase Elements only)

Shows the controls for the arranger track.

Tool Buttons

Shows the buttons for editing in the **Project** window.

Color Menu

Allows you to define the **Project** window colors.

Nudge Palette

Allows you to nudge or trim events or parts.

Snap to Zero Crossings

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

Snap

Allows you to restrict horizontal movement and positioning to certain positions.

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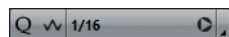
Allows you to move recorded audio or MIDI to musical relevant positions.

Performance Meter

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

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, select **File > Preferences > Editing > Tools** and activate **Pop-up Toolbox on Right-Click**.

- To open the toolbox, right-click in the event display or editor.

  If **Pop-up Toolbox on Right-Click** it is deactivated, the context menu opens.

- To open the context menu instead of the toolbox, press any modifier key and right-click in the event display or editor.

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

- To change the number of rows in which the tools are arranged on the toolbox, keep the right mouse button pressed on the toolbox until the mouse pointer changes to a double arrow, and drag to the bottom or right.
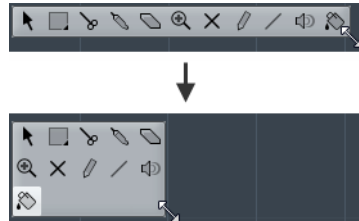
Status Line

The status line shows the most important project settings.

- To show or hide the status line, click **Set up Window Layout** on the toolbar and activate or deactivate **Status Line**.
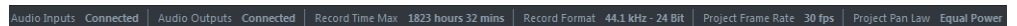
The following information is shown in the status line:

Audio Inputs

Displays the connection state of your audio inputs. Click in this field to open the **VST Connections** dialog.

Audio Outputs

Displays the connection state of your audio outputs. Click in this field to open the **VST Connections** dialog.

Record Time Max

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

Record Format

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

Project Frame Rate

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

Project Pan Law

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

Info Line

The info line shows information about the currently selected event or part in the **Project** window.

Name	Start	End	Length	Offset	Mute	Transpose	Velocity
Groove Agent ONE 01	9. 1. 1. 0	11. 1. 1. 0	2. 0. 0. 0	-1. 1. 2. 69	-	0	0

▪ To show or hide the info line, click the **Set up Window Layout** button on the toolbar and activate or deactivate the **Info Line** option.

Editing in the Info Line

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

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

▪ Value changes are applied to all selected elements, relatively to the current values.

For example, you have selected two audio events. The first event has a length of 1 bar, the second of 2 bars. If you change the info line value to 3, the first event is resized to 3 bars and the second event to 4 bars.

▪ Value changes are applied absolutely to the current values, if you press [Ctrl]/[Command] while modifying the value on the info line.

In the example above, both events are resized to 3 bars.

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

Overview Line

The overview line allows you to zoom and navigate to other sections in the **Project** window.

▪ To show or hide the overview line, click the **Set up Window Layout** button on the toolbar and activate or deactivate **Overview Line**.

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

▪ To zoom the event display in or out horizontally, resize the rectangle by dragging the edges.

▪ To navigate to another section of the event display, drag the rectangle to the left or right, or click in the upper part of the overview.

Ruler

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

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

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

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

RELATED LINKS

Ruler Display Formats

You can select a display format for the ruler.

▪ To select a new display format for the ruler, click the arrow button to the right of the ruler and select an option from the pop-up menu.
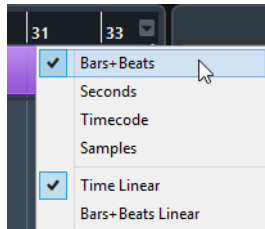
The selection that you make affects the time display formats in the following areas:

▪ Ruler

▪ Info line

▪ Tooltip position values

The following options are available:

Bars+Beats

Bars, beats, sixteenth notes, and ticks. By default, there are 120 ticks per sixteenth note, but you can adjust this with the **MIDI Display Resolution** setting (**File > Preferences > MIDI**).

Second

Hours, minutes, seconds, and milliseconds.

29

Timecode

Hours, minutes, seconds, and frames. The number of frames per second (fps) is set in the **Project Setup** dialog with the **Frame Rate** pop-up menu. You can also display subframes by activating **Show Timecode Subframes** (**File > Preferences > Transport**).

Samples

Samples

Time Linear

Sets the ruler linear to time.

Bars+Beats Linear

Sets the ruler linear to bars and beats.

Inspector

The Inspector shows controls and parameters for the first (topmost) selected track type in the track list.

- To show or hide the Inspector, click the **Set up Window Layout** button on the toolbar and activate or deactivate **Inspector**.
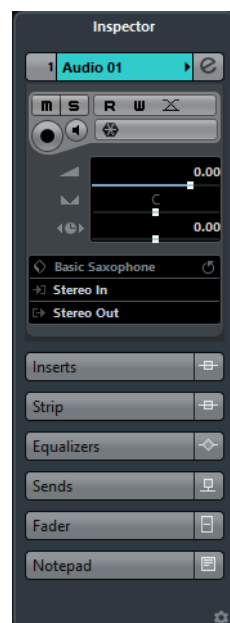
Inspector Sections

The **Inspector** is divided into a number of sections that each contain different controls for the track.

Not all **Inspector** sections are shown by default. The available sections depend on the selected track type.

- To hide or show sections, click on their names.

  Clicking the name for a hidden section brings it into view and hides the other sections.

- To hide or show a section without closing the other sections, [Ctrl]/[Command]-click the section name.

RELATED LINKS

Setting Up Inspector Sections

You can set up the visible **Inspector** sections for all tracks of the selected track type.

- To open the **Audio Track Inspector Settings** dialog, click the **Open Inspector Settings Dialog** button at the bottom right of the **Inspector**.
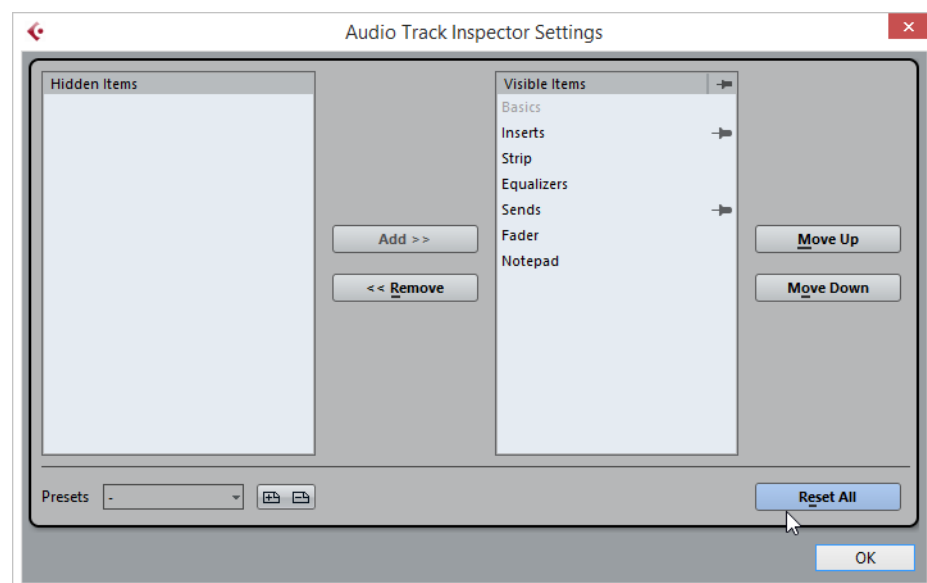
Hidden Items

This section displays sections currently hidden in the Inspector.

Visible Items

This section displays sections currently visible in the Inspector.

Pin

Allows you to pin the open/close status of the selected Inspector section.

Add

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

Remove

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

Move Up/Move Down

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

Presets

Allows you to save Inspector section settings as presets.

Reset All

Allows you to restore all default Inspector section settings.

Global Track Controls

The global track controls area above the track list allows you to add tracks to the track list.

1)   **Add Track**

Allows you to add tracks to the track list.

RELATED LINKS
Channel Selector on page 209

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

Dividing the Track List

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

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

- To divide the track list, click the **Divide Track List** button in the top right corner of the **Project** window below the ruler.
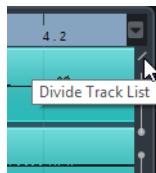
Video, marker, or arranger tracks are automatically moved to the upper track list. All other track types are moved to the lower track list.

- To move any type of track from the lower track list to the upper and vice versa, right-click it in the track list and select **Toggle Track List** from the context menu.

- To resize the upper part of the track list, click and drag the divider between the track list sections.

- To revert to a single track list, click **Divide Track List** again.

Event Display

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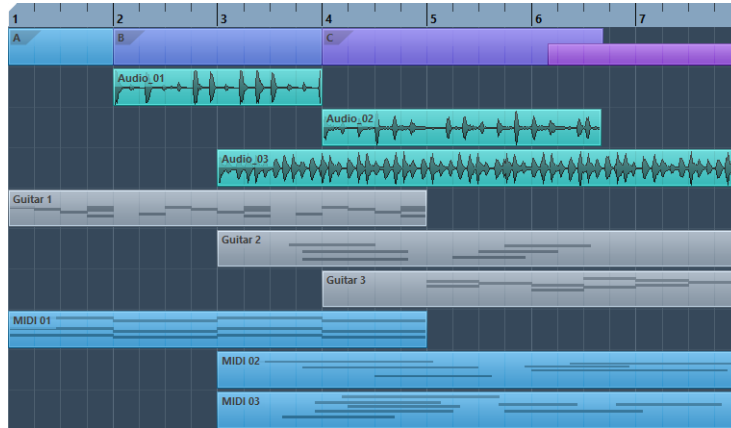
Racks

The racks zone of the project window allows you to display the **VST Instruments** and the **MediaBay**.

- To show or hide the rack zone, click the **Set up Window Layout** button on the toolbar and activate or deactivate **Racks**.

- Click the **VST Instruments** tab to add and edit VST instruments from within the rack zone of the project window.

- Click the **MediaBay** tab to drag audio events and MIDI parts into project window or to drag audio events and MIDI parts from the project window into the MediaBay and store them as audio or MIDI loops.

Zooming in the Project Window

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

Note the following:

- When you are using the **Zoom** tool (magnifying glass), the zooming result depends on the **Zoom Tool Standard Mode: Horizontal Zooming Only** option (**File > Preferences > Editing > Tools**).

  If this option is activated and you drag a selection rectangle with the **Zoom** tool, the window is only zoomed horizontally, the track height does not change. If the option is deactivated, the window is zoomed both horizontally and vertically.

- When you are using the vertical zoom sliders, the tracks are scaled relatively.

  If you have made any individual track height adjustments, the relative height differences are maintained.

- If the **Zoom while Locating in Time Scale** option (**File > Preferences > Transport**) is activated, you can also zoom by clicking in the ruler and dragging up or down with the left mouse button pressed.

  Drag up to zoom out; drag down to zoom in.

- To zoom in on the contents of parts and events vertically, use the waveform zoom slider in the top right corner of the event display.

  This is useful when viewing quiet audio passages.
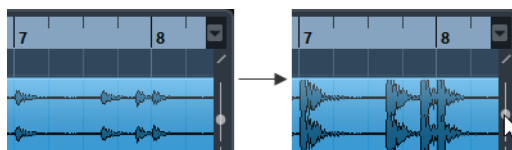
IMPORTANT

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

- If the **Quick Zoom** option (**File > Preferences > Editing**) is activated, the contents of parts and events are not continuously redrawn when you zoom manually. Instead, the contents are redrawn once you have stopped changing the zoom. Activate the **Quick Zoom** option if screen redraws are slow on your system.

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

This option is available only in the **Sample Editor**.

Zoom In Vertically

Zooms in one step vertically.

Zoom Out Vertically

Zooms out one step vertically.

Zoom In Tracks

Zooms in on the selected tracks one step vertically.

Zoom Out Tracks

Zooms out the selected tracks one step vertically.

Zoom Selected Tracks

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

Undo/Redo Zoom

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

RELATED LINKS

Zoom Presets

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

- To open the **Zoom Presets** pop-up menu, click the button to the left of the horizontal zoom control.
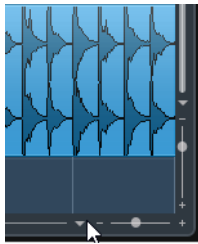
The upper part of the menu lists the zoom presets.
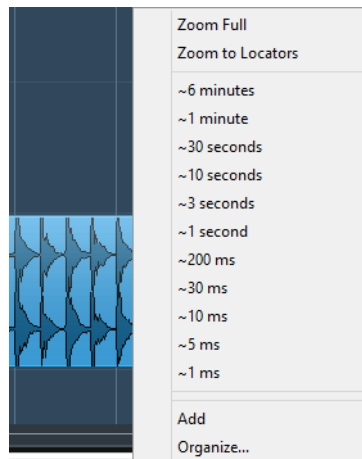
- To save the current zoom setting as a preset, open the **Zoom Presets** pop-up menu and select **Add**. In the **Type In Preset Name** dialog that opens, type in a name for the preset and click **OK**.

- To select and apply a preset, select it from the **Zoom Presets** pop-up menu.

- To zoom out so that the whole project is visible, open the **Zoom Presets** pop-up menu and select **Zoom Full**.

  This displays the project from the project start to the length that is set in the **Project Setup** dialog.

- To delete a preset, open the **Zoom Presets** pop-up menu and select **Organize**. In the dialog that opens, select the preset in the list and click the **Delete** button.

- To rename a preset, open the **Zoom Presets** pop-up menu and select **Organize**. In the dialog that opens, select a preset in the list and click the **Rename** button. In the dialog that opens, type in a new name for the preset. Click **OK** to close the dialogs.

IMPORTANT

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

Zooming In On Cycle Markers

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

- To zoom in on a cycle marker, click the button to the left of the horizontal zoom control to open a pop-up menu and select a cycle marker.
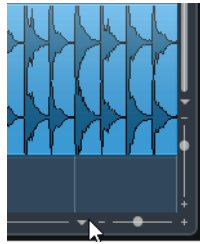
The middle part of the pop-up menu lists any cycle markers that you have added to the project.

NOTE

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

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

You cannot edit the cycle markers in this pop-up menu.

RELATED LINKS
Markers Window on page 198

Zoom History

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

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

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

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

Snap Function

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

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

Setting the Snap Point (Cubase Elements only)

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

PROCEDURE

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

RESULT

The snap point is set at the cursor position.

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

NOTE

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

RELATED LINKS

Snap to Zero Crossing

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

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

Snap Types

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

- To select a snap type, open the **Snap Type** pop-up menu.
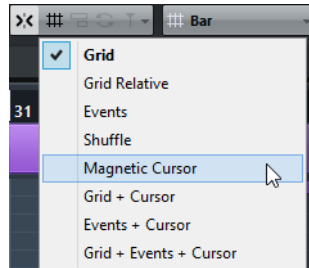
The following snap types are available:

Grid

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

When you select **Seconds** as ruler format, the **Grid Type** contains time-based grid options.
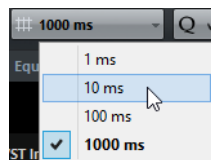
Grid Relative

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

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

NOTE

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

Events

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

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

Shuffle

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

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

1	2	3	4	5

Dragging event 2 past event 4…

1	3	4	2	5

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

Magnetic Cursor

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

Grid + Cursor

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

Events + Cursor

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

Events + Grid + Cursor

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

Cross-Hair Cursor

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

▪ To set up the cross-hair cursor, select **File > Preferences > Editing > Tools**.

You can set up the colors for the line and the mask of the cross-hair cursor, and define its width.

The cross-hair cursor works as follows:

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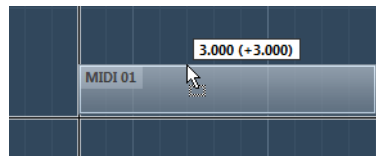
Cross-hair cursor when moving an event.

- When the **Object Selection** tool, the **Cut** tool, or any other tool that makes use of this function is selected, the cross-hair cursor appears as soon as you move the mouse over the event display.

- The cross-hair cursor is only available for tools where such a function is of any use. The **Mute** tool, for example, does not use a cross-hair cursor, as you have to click directly on an event to mute it.

Edit History Dialog

In the **Edit History** dialog, you can undo all actions in the **Project** window as well as in the editors. You can also undo audio processes or applied plug-in effects. The dialog contains a list of all your edits, with the most recent action at the bottom of the list.

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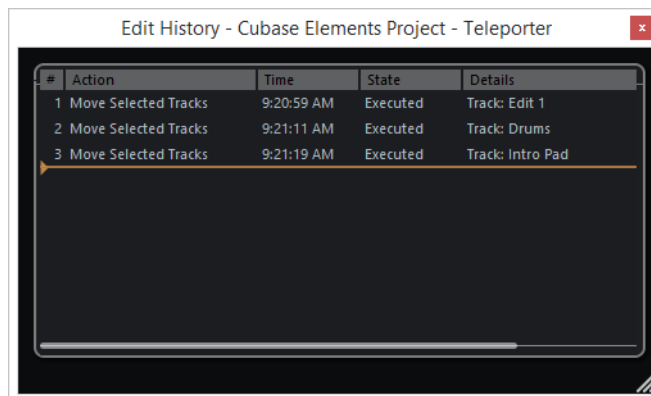
The **Action** column displays the name of the action while the **Time** column tells you when this action was performed. In the **Details** column further details are shown. Here you can enter new text by double-clicking in the column.

- To undo your actions, move the horizontal, colored line upwards to the desired position.

  You can only undo your actions in reverse order, for example, the last performed action is the first action to be undone.

- To redo an action that was undone previously, move the line down the list again.

Setting the Number of Maximum Undo Steps

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

PROCEDURE

1. Select **File > Preferences > General**.
2. Set the number in the **Maximum Undo Steps** field.

Project Handling

Creating New Projects

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

1. Select **File > New Project**.

    Depending on your settings, either the **Steinberg Hub** or the **Project Assistant** dialog opens.

2. In the location options section, select where to store the new project.
    - To use the default location, select **Use default location**.
    - To choose another location, select **Prompt for project location**, click **Create**, and set the location in the dialog that opens.

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.

Steinberg Hub

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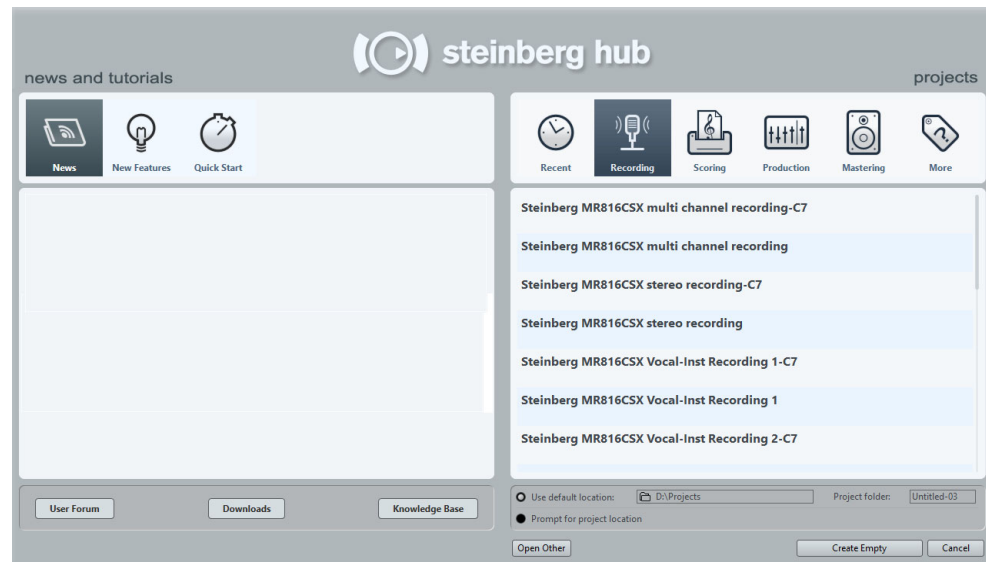
News and Tutorials section

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

NOTE

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

Projects section

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

Category bar

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

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

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

Template list

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

Location options

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

Open other

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

RELATED LINKS

Deactivating Steinberg Hub

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

PROCEDURE

▪ Select **File > Preferences > General** and deactivate **Use Steinberg Hub**.

RESULT

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

Project Assistant

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

Category bar

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

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

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

Template list

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

Location options

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

Open other

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

About Project Files

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

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

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

- Audio

- Edits

- Images

- Track Pictures

About Template Files

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

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

- Factory templates for specific scenarios. These are listed in the **Recording**, **Scoring**, **Production**, or **Mastering** categories.

- The default template. This is listed in the **More** category.

- Any new user templates that you create and save. These are listed in the **More** category.

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

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

Saving a Project Template File

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

PREREQUISITE

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

PROCEDURE

1. Set up a project.
2. Select **File > Save As Template.**
3. In the **New Preset** section of the **Save As Template** dialog, enter a name for the new project template.
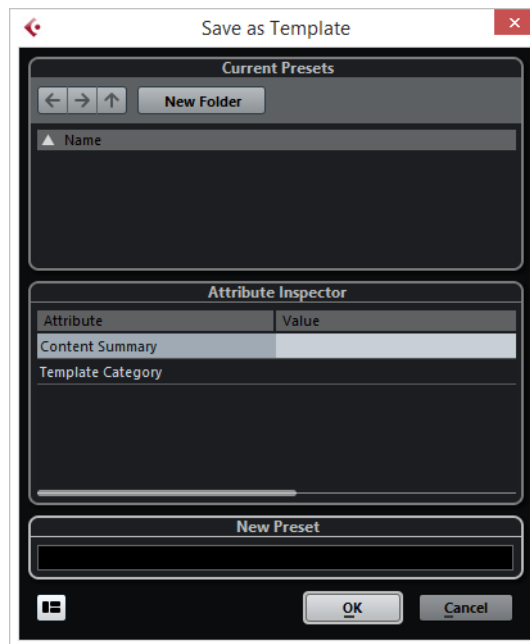
4. In the **Attribute Inspector** section, double-click the **Value** field of the **Content Summary** attribute to enter a description for the template.
5. Click the **Value** field of the **Template Summary** attribute and select a template category from the pop-up menu.

   If you do not select a category, the new template will be listed in **Steinberg Hub** in the **More** category.
6. Click **OK** to save the template.

Renaming Templates

PROCEDURE

1.   In Steinberg Hub or the **Project Assistant**, right-click a template and select **Rename**.

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

Project Setup Dialog

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

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

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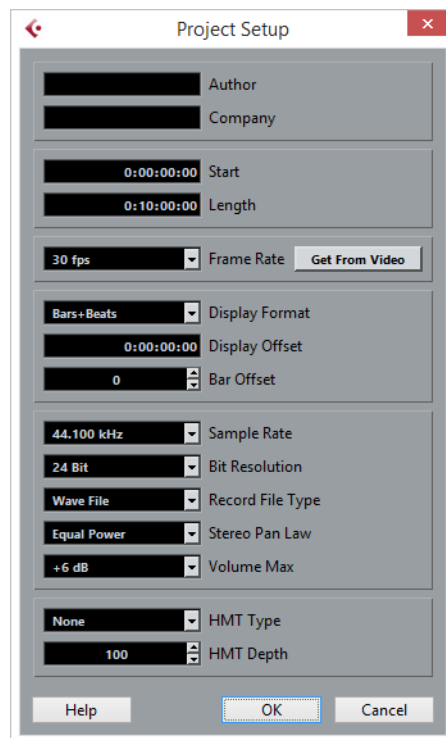
IMPORTANT

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

The following options are available:

Author

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

Company

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

Start

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

Length

> Allows you to specify the length of the project.

Frame Rate

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

Get From Video

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

Display Format

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

Display Offset

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

Bar Offset

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

Sample Rate

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

> • If your audio hardware generates the sample rate internally and you select a non-supported sample rate, this is indicated by a different color. In this case, you must set a different sample rate to make your audio files play back properly.

- If you select a sample rate that your audio hardware supports, but that differs from its current sample rate setting, it is automatically changed to the project sample rate.

- If your audio hardware is externally clocked and receives external clock signals, sample rate mismatches are accepted.

Bit Resolution

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

NOTE

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

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

Record File Type

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

- **Wave files** are a common file format on the PC platform. For recordings larger than 4 GB, the EBU RIFF standard is used. If a FAT 32 disk is used (not recommended), audio files are split automatically.

- **Wave 64** is a proprietary format developed by Sonic Foundry Inc. Audio-wise it is identical to the Wave format, but the internal file structure allows for much larger file sizes as required by long live recordings.

- **Broadcast Wave Files** are, in terms of audio content, identical with regular Wave files, but with embedded text strings for supplying additional information about the file. These can be set up in the Preferences dialog (Record–Audio–Broadcast Wave).

- **AIFF Files**, Audio Interchange File Format, is a defined standard by Apple Inc. and can be used on most computer platforms. AIFF files can contain embedded text strings. These can be set up in the Preferences dialog (Record–Audio–Broadcast Wave).

- **FLAC Files**, Free Lossless Audio Codec, is an open source format. Audio files recorded in this format are typically 50% to 60% smaller than regular Wave files.

NOTE

If your recorded Wave file is larger than 4 GB and **Use RF64 Format** is activated on the **When Recording Wave Files larger than 4GB** pop-up menu (**File > Preferences > Record > Audio**), your recording is saved as an RF64 file. This way, you do not have to worry about the file size during recording. However, keep in mind that this format is not supported by all applications.

Stereo Pan Law

If you pan a channel left or right, the sum of the left and right side is higher (louder), than if this channel is panned center. These modes allow you to attenuate signals panned center. **0dB** 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 +12dB. If you load projects that were created with Cubase versions older than 5.5, this value is set to the old default value of +6dB.

HMT Type (MIDI only (Cubase Elements only))

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

HMT Depth (MIDI only (Cubase Elements only))

Allows you to specify the overall degree of retuning.

Opening Project Files

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

IMPORTANT

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

PROCEDURE

1. Select **File > Open**.

2. In the file dialog that opens, select the project that you want to open and click **Open**.

3. If there already is an open project, you are asked if you want to activate the new project. Do one of the following:
    - To activate the project, click **Activate**.

- To open the project inactive, click **No**.

  This reduces load times for projects.

Activating Projects

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

PROCEDURE

- To activate a project, click its **Activate Project** button.
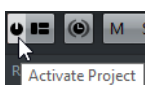
Opening Recent Projects

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

- In the category bar of Steinberg Hub or the **Project Assistant** dialog, click **Recent**, select a project from the projects list, and click **Open**.

- Select **File > Recent Projects** and select a recently opened project.

Re-Routing Missing Ports

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

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

NOTE

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

RELATED LINKS

Saving Project Files

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

▪ To save the project and specify a file name and location, open the **File** menu and select **Save As**.

▪ To save the project with its current name and location, open the **File** menu and select **Save**.

NOTE

Make sure that the **Use File Extension in File Dialog** option (**File > Preferences > General**) is activated. This automatically adds the file name extension when you save a file and keeps your projects compatible with both Windows and Mac OS X systems.

About the Auto Save Option

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

NOTE

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

If you activate the **Auto Save** option (**File > Preferences > General**), Cubase automatically saves backup copies of all open projects with unsaved changes. These backup copies are named "<project name>-xx.bak" where xx is an incremental number. Unsaved projects are backed up in a similar way as "UntitledX-xx.bak", with X being the incremental number for unsaved projects. All backup files are saved in the project folder.

▪ To specify the time intervals in which a backup copy is created, use the **Auto Save Interval** setting.

▪ To specify how many backup files are created with the Auto Save function, use the **Maximum Backup Files** option. When the maximum number of backup files is reached, the existing files are overwritten, starting with the oldest file.

Saving Project Files As a New Version

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

▪   To save a new version of the active project, press [Ctrl]/[Command]-[Alt]/[Option]-[S].

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

Reverting to the Last Saved Version

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

PROCEDURE

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

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

Choosing a Project Location

In **Steinberg Hub** and in the Project Assistant, you can specify where to save a project.
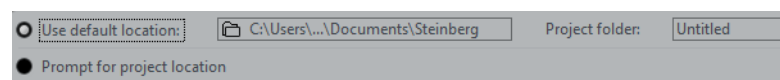
▪   To create a project in the default project location, select **Use default location**.

In the **Project folder** field, you can specify a name for the project folder. If you do not specify a project folder here, the project is saved in a folder named `Untitled`.

▪   To change the default project location, click in the path field.

A file dialog opens that allows you to specify a new default location.

▪   To create the project in a different location, select **Prompt for project location**.

In the dialog that opens, specify a location and a project folder.

Removing Unused Audio Files

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

PREREQUISITE

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

PROCEDURE

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

   NOTE

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

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

Creating Self-Contained Projects

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

The following functions facilitate this task:

▪ Select **Media > Prepare Archive** to verify that every clip that is referenced in the project is located in the project folder, and to take actions if that is not the case.

▪ Select **File > Back up Project** to create a new project folder where you can save the project file and the necessary work data. The original project remains unchanged.

Preparing Archives

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

PROCEDURE

1. Select **Media > Prepare Archive**.

    If your project references external files, you are prompted if you want to copy them to your working directory. If any processing has been applied, you must decide if you want to freeze edits.

2. Click **Proceed**.

RESULT

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

AFTER COMPLETING THIS TASK

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

Backing Up Projects

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

PROCEDURE

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

RESULT

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

NOTE

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

Back up Project Options Dialog

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

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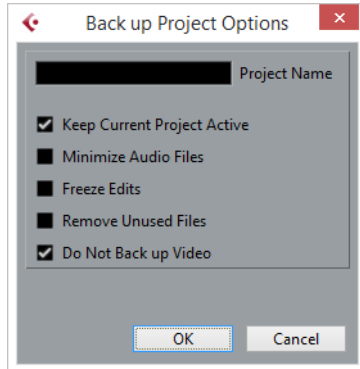
Project Name

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

Keep Current Project Active

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

Minimize Audio Files

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

Freeze Edits

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

Remove Unused Files

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

Do Not Back up Video

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

Tracks

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

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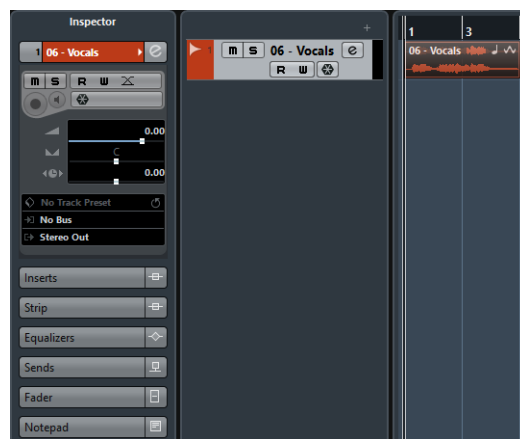
Audio Tracks

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

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

RELATED LINKS

Audio Track Inspector

The **Inspector** for audio tracks contains controls and parameters that allow you to edit your audio track.
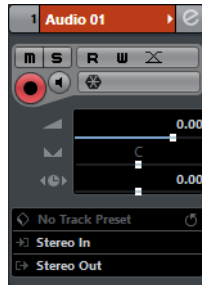
The top section of the audio track **Inspector** contains the following basic track settings:

Track name

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

Edit

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

Mute

Mutes the track.

Solo

Solos the track.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

Auto Fades Settings

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

Record enable

Activates the track for recording.

Monitor

Routes incoming signals to the selected output.

Freeze Audio Channel

Allows you to freeze the audio channel.

Volume

Allows you to adjust the level for the track.

Pan

Allows you to adjust the panning of the track.

Delay

Allows you to adjust the playback timing of the track.

Load/Save/Reload Track Preset

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

Input Routing

Allows you to specify the input bus for the track.

Output Routing

Allows you to specify the output bus for the track.

Audio Track Inspector sections

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

Inserts Section

Allows you to add insert effects to the track.

Strip Section

Allows you to set up the channel strip modules.

Equalizers Section

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

Sends Section

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

Fader Section

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

Notepad Section
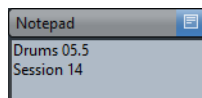
Allows you to enter notes about the track.

Audio Track Controls

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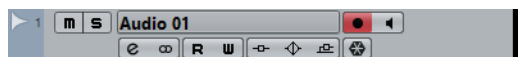
The track list for audio tracks contains the following controls:

Track name

Double-click to rename the track.

Edit

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

Mute

Mutes the track.

Solo

Solos the track.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

Record enable

Activates the track for recording.

Monitor

Routes incoming signals to the selected output.

Bypass Inserts

Bypasses the inserts for the track.

Bypass EQs

Bypasses the equalizers for the track.

Bypass Sends

Bypasses the sends for the track.

Channel Configuration

Shows the channel configuration of the track.

Freeze Audio Channel

Allows you to freeze the audio channel.

Instrument Tracks

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

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

Instrument Track Inspector

The Inspector for instrument tracks contains controls and parameters that allow you to control your instrument track. It shows some of the sections from VST instrument channels and MIDI tracks.
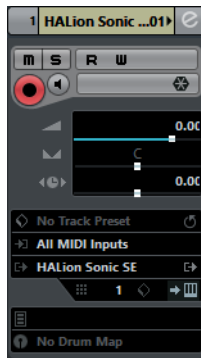
The top section of the instrument track Inspector contains the following basic track settings:
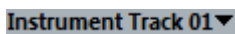
Track name

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

Edit

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

Mute

Mutes the track.

Solo

Solos the track.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

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).

Freeze Instrument Channel

Allows you to freeze the instrument.

Volume

Allows you to adjust the level for the track.

Pan

Allows you to adjust the panning of the track.

Delay

Allows you to adjust the playback timing of the track.

Load/Save/Reload Track Preset

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

Input Routing

Allows you to specify the input bus for the track.

Output Routing

Allows you to specify the output bus for the track.

Edit Instrument

Allows you to open the instrument panel.

Programs
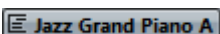
Allows you to select a program.

Drum Map

Allows you to select a drum map for the track.

Instrument Track Inspector Sections

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

MIDI Modifiers Section

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

Instrument Section
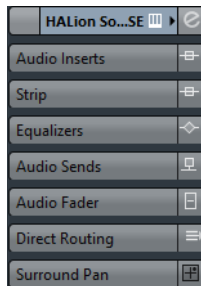
Shows the audio-related controls for the instrument.

Notepad Section

Allows you to enter notes about the track.

Instrument Track Controls

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

The track list for instrument tracks contains the following controls:

Track name

Double-click to rename the track.

Edit

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

Mute

Mutes the track.

Solo

Solos the track.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

Record enable

Activates the track for recording.

Monitor

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).

Bypass Inserts

Bypasses the inserts for the track.

Bypass EQs

Bypasses the equalizers for the track.

Bypass Sends

Bypasses the sends for the track.

ASIO Latency Compensation

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

Drum Map

Allows you to select a drum map for the track.

Programs
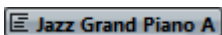
Allows you to select a program.

Instrument
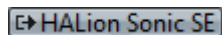
Allows you to select an instrument.

Edit Instrument

Allows you to open the instrument panel.

Freeze Channel

Allows you to freeze the instrument.

MIDI Tracks

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

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

MIDI Track Inspector

The Inspector for MIDI tracks contains controls and parameters that allow you to control your MIDI track. These affect MIDI events in realtime, on playback, for example.
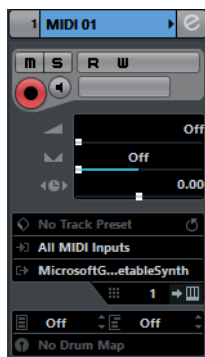
The top section of the MIDI track Inspector contains the following basic track settings:
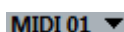
Track name

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

Edit

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

Mute

Mutes the track.

Solo

Solos the track.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

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).

MIDI Volume

Allows you to adjust the MIDI volume for the track.

MIDI Pan

Allows you to adjust the MIDI pan for the track.

Delay

Allows you to adjust the playback timing of the track.

Load/Save/Reload Track Preset

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

Input Routing

Allows you to specify the input bus for the track.

Output Routing

Allows you to specify the output bus for the track.

Channel

Allows you to specify the MIDI channel.

Edit Instrument

Allows you to open the instrument panel.

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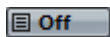
Allows you to set a bank select message that is sent to your MIDI device.

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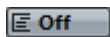
Allows you to set a program change message that is sent to your MIDI device.

Drum Map

Allows you to select a drum map for the track.

MIDI Track Inspector Sections

Apart from the basic track settings that are always shown, MIDI tracks provide other Inspector sections. These are described in the following sections.
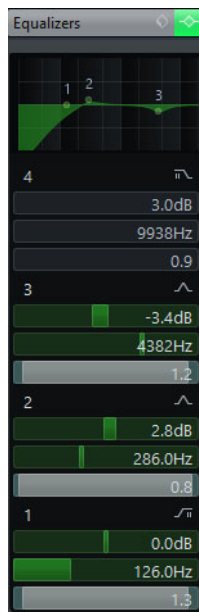
MIDI Modifiers Section
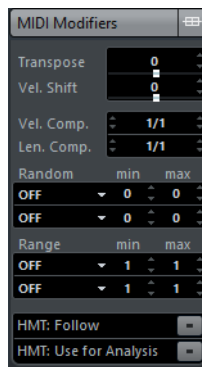
Allows you to transpose or adjust the velocity of the MIDI track events in realtime during playback.

MIDI Fader Section
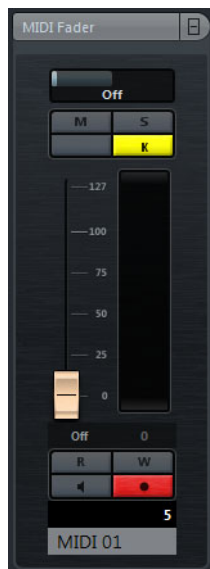
Shows a duplicate of the corresponding **MixConsole** channel.

Notepad Section
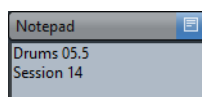
Allows you to enter notes about the track.

MIDI Track Controls

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

The track list for MIDI tracks contains the following controls:
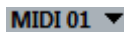
Track name

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

Edit

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

Mute

Mutes the track.

Solo

Solos the track.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

Record enable

Activates the track for recording.

Monitor

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).

Drum Map

Allows you to select a drum map for the track.

Channel

Allows you to specify the MIDI channel.

Output
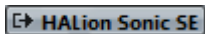
Allows you to specify the output for the track.

Programs
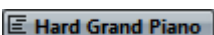
Allows you to select a program.

Arranger Track

You can use the arranger track for arranging your project by marking out sections and determining in which order they are to be played back.

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

Arranger Track Inspector

The arranger track Inspector displays the lists of available arranger chains and arranger events.
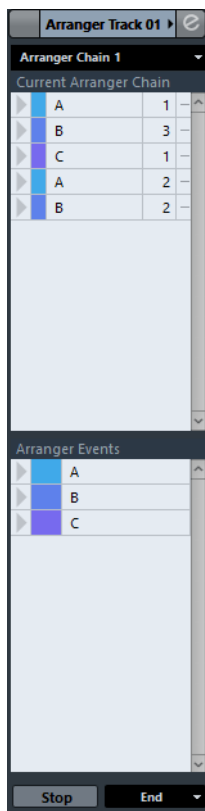
The arranger track Inspector contains the following settings:

Track Name
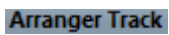
Double-click to rename the track.

Edit

Opens the Arranger Editor.

Select Active Arranger Chain + Function
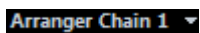
Allows you to select the active arranger chain, to rename it, to create a new one, to duplicate or to flatten it.

Current Arranger Chain
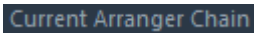
Shows the active arranger chain.

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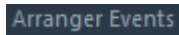
Lists all arranger events in your project. Click the arrow for an arranger event to play it back and start the live mode.

Stop
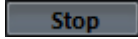
Allows you to stop the live mode.

Jump mode
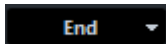
In this pop-up menu you can define how long the active arranger event is played before jumping to the next one.

Arranger Track Controls

The Track List for the arranger track contains controls and parameters that allow you to edit the arranger track.
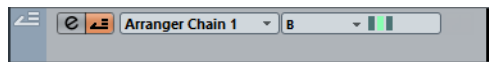
The track list for the arranger track contains the following controls:

Select Active Arranger Chain
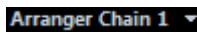
Allows you to select the active arranger chain.

Current Item/Current Repeat

Displays which arranger event and which repeat is active.

Activate Arranger Mode

Allows you to activate and deactivate the arranger mode.

Edit

Opens the Arranger Editor for the track.

Chord Track

You can use the chord track for adding chord and scale events to your project. These can transform the pitches of other events.

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

Chord Track Inspector

The chord track Inspector contains a number of settings for the chord events.
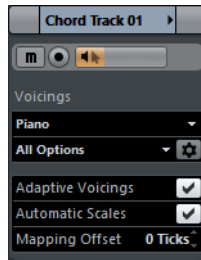
The top section of the chord track Inspector contains the following settings:

Track name

Click to show/hide the basic track settings section.

Mute

Mutes the track.

Record enable

Activates the track for recording.

Acoustic Feedback

Allows you to audition the events on the chord track. For this to work, you need to select a track for auditioning in the track list.

Voicing library

Allows you to set up a voicing library for the track.

Voicing library subset

Allows you to select a library subset.

Configure voicing parameters

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

Automatic Voicings

Activate this to set the voicings automatically.

Automatic Scales

Activate this to let the program create scale events automatically.

Mapping Offset

Allows you to specify an offset value to make sure that chord events also affect the MIDI notes that have been triggered too early (enter a negative value) or too late (enter a positive value).

Chord Track Inspector Sections

Apart from the basic track settings that are always shown, the chord track provides other Inspector sections. These are described in the following sections.
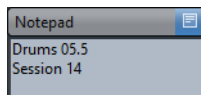
Notepad Section
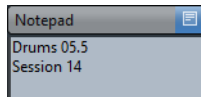
Allows you to enter notes about the track.

Chord Track Controls

The Track List for the chord track contains controls and parameters that allow you to edit the chord track.
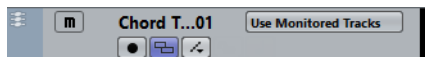
The track list for chord tracks contains the following controls:

Mute

Mutes the track.

Select Track for Auditioning
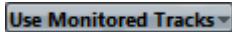
Allows you to select a track for auditioning the chord events.

Record Enable

Allows you to record chord events.

Resolve Display Conflicts

Allows you to show all chord events on the track properly, even at low horizontal zoom levels.

Show Scales

Allows you to show the scale lane in the lower part of the chord track.

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. All FX channel tracks are automatically placed in a special FX channel folder in the track list, for easy management. Each FX channel has a corresponding channel in the MixConsole. An FX channel track can have any number of automation tracks.

▪   To add an FX channel track to your project, select **Project > Add Track > FX Channel**.

FX Channel Track Inspector

The Inspector for FX channel tracks shows the settings for the FX channel. When you select the folder track instead, the Inspector shows the folder and the FX channels it contains. You can click one of the FX channels shown in the folder to have the Inspector show the settings for that FX channel.
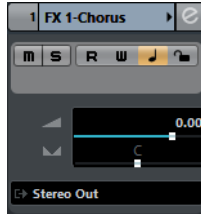
The FX channel track Inspector contains the following basic track settings:

Track name

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

Edit

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

Mute

Mutes the track.

Solo

Solos the track.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

Volume

Allows you to adjust the level for the track.

Pan

Allows you to adjust the panning of the track.

Output Routing

Allows you to specify the output bus for the track.

FX Channel Track Inspector Sections

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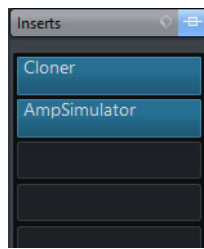
Inserts Section

Allows you to add insert effects to the track.

Strip Section

Allows you to set up the channel strip modules.

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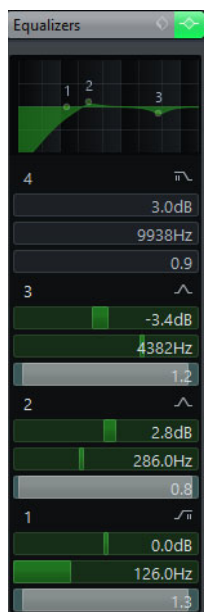
Allows you to adjust the EQs for the track. You can have up to four bands of EQ for each track.

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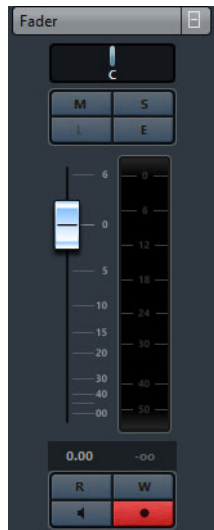
Shows a duplicate of the corresponding **MixConsole** channel.

Notepad Section
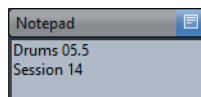
Allows you to enter notes about the track.

FX Channel Track Controls

The Track List for FX channel tracks contains controls and parameters that allow you to edit the settings for the effect.

The track list for FX channel tracks contains the following controls:

Track name

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

Edit

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

Mute

Mutes the track.

Solo

Solos the track.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

Mute Automation

Deactivates the automation read function for the selected parameter.

Automation parameter

Allows you to select a parameter for automation.

Bypass Inserts

Bypasses the inserts for the track.

Bypass EQs

Bypasses the equalizers for the track.

Bypass Sends

Bypasses the sends for the track.

Channel Configuration

Shows the channel configuration of the track.

Folder Tracks

Folder tracks function as containers for other tracks, making it easier to organize and manage the track structure. They also allow you to edit several tracks at the same time.

▪ To add a folder track to your project, select **Project > Add Track > Folder**.

Folder Track Inspector

The Inspector for folder tracks shows the folder and its underlying track, much like a folder structure in the Windows Explorer or the Mac OS X Finder. When you select the one of the tracks shown under the folder, the Inspector shows the settings for that track.
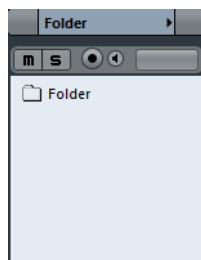
The folder track Inspector contains the following basic track settings:

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

◀

Routes incoming signals to the selected output.

Folder Track Controls

The Track List for folder tracks contains controls and parameters that allow you to edit all tracks in the folder.

The track list for folder tracks contains the following controls:

Expand/Collapse
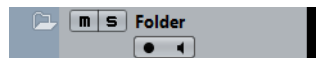
Shows/hides the tracks in the folder. Hidden tracks are played back as usual.

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

◀

Routes incoming signals to the selected output.

Group Channel Tracks

You can use group channel tracks to create a submix of several audio channels and apply the same effects to them. A group channel track contains no events as such, but displays settings and automation for the corresponding group channel.

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

- To add a group channel track to your project, select **Project > Add Track > Group Channel**.

Group Channel Track Inspector

The Inspector for group channel tracks shows the settings for the group channel.

The group channel track Inspector contains the following basic track settings:

Track name

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

Edit

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

Mute Automation

Deactivates the automation read function for the selected parameter.

Solo

Solos the track.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

Volume

Allows you to adjust the level for the track.

Pan

Allows you to adjust the panning of the track.

Output Routing

Allows you to specify the output bus for the track.

NOTE

When you select the group folder track instead, the Inspector shows the folder and the group channels it contains. You can click one of the group channels shown in the folder, to have the Inspector show the settings for that group channel.
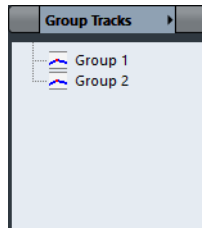
Group Channel Track Inspector sections

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

Inserts Section

Allows you to add insert effects to the track.

Strip Section

Allows you to set up the channel strip modules.

Equalizers Section

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

Sends Section

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

Fader Section

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

Notepad Section
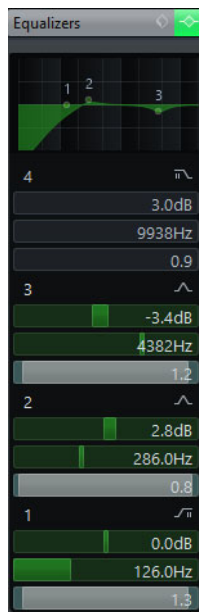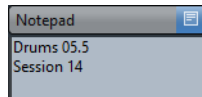
Allows you to enter notes about the track.

Group Channel Track Controls

The Track List for group channel tracks contains controls and parameters that allow you to edit the settings for the group.

The track list for group channel tracks contains the following controls:

Track name

Double-click to rename the track.

Edit

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

Mute

Mutes the track.

Solo

Solos the track.

Read Automation

Allows you to read track automation.

Write Automation

Allows you to write track automation.

Mute Automation

Deactivates the automation read function for the selected parameter.

Automation parameter

Allows you to select a parameter for automation.

Bypass Inserts

Bypasses the inserts for the track.

Bypass EQs

Bypasses the equalizers for the track.

Bypass Sends

Bypasses the sends for the track.

Channel Configuration

Shows the channel configuration of the track.

Marker Track

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

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

Marker Track Inspector

The marker track Inspector displays the marker list.

The marker track Inspector contains the following settings:

Track name

Double-click to rename the track.

Edit

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

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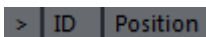
Shows the markers, their IDs, and time positions. Click in the leftmost column for a marker to move the project cursor to the marker position.

Marker Track Controls

The track list for the marker track contains controls and parameters that allow you to edit the marker track.
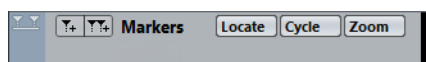
Track name

Double-click to rename the track.

Locate
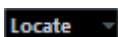
Allows you to move the project cursor to the selected marker position.

85
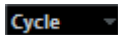
Cycle

Allows you to select a cycle marker.

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.

Ruler Track

You can use ruler tracks to show several rulers with different display formats for the timeline. This is completely independent from the main ruler, as well as rulers and position displays in other windows.

▪ To add a ruler track to your project, select **Project > Add Track > Ruler**.

Ruler Track Controls

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

Right-click the ruler to open the display format pop-up menu.
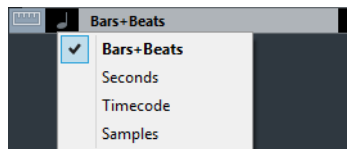
The following display formats are available:

Bars+Beats

Activates a display format of bars, beats, sixteenth notes, and ticks. By default there are 120 ticks per sixteenth note, but you can adjust this with the **MIDI Display Resolution** setting 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 **Frame Rate** pop-up menu. You can also display subframes by activating **Show Timecode Subframes** in the **Preferences** dialog (Transport page).

Samples

Activates a display format of samples.

Ruler tracks are not affected by the display format setting in the **Project Setup** dialog.

Video Track

You can use the video track to play back video events. Video files are displayed as events/clips on the video track, with thumbnails representing the frames in the film.

▪ To add a video track to your project, select **Project > Add Track > Video**.

Video Track Inspector

The video track Inspector contains a number of parameters to control the video track.
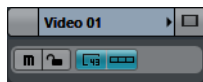
The video track Inspector contains the following settings:

Reveal Video Window

Opens the **Video Player** window.

Mute Video Track

Mutes the track.

Video Track Inspector Section

Apart from the basic track settings that are always shown, the video track provides an other Inspector section. This is described in the following section.

Notepad Section
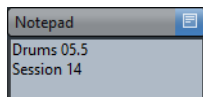
Allows you to enter notes about the track.

Video Track Controls

The track list for the video track contains a number of parameters to control the video track.
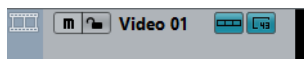
The track list for the video track contains the following settings:

Mute Video Track

Mutes the track.

Customizing Track Controls

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

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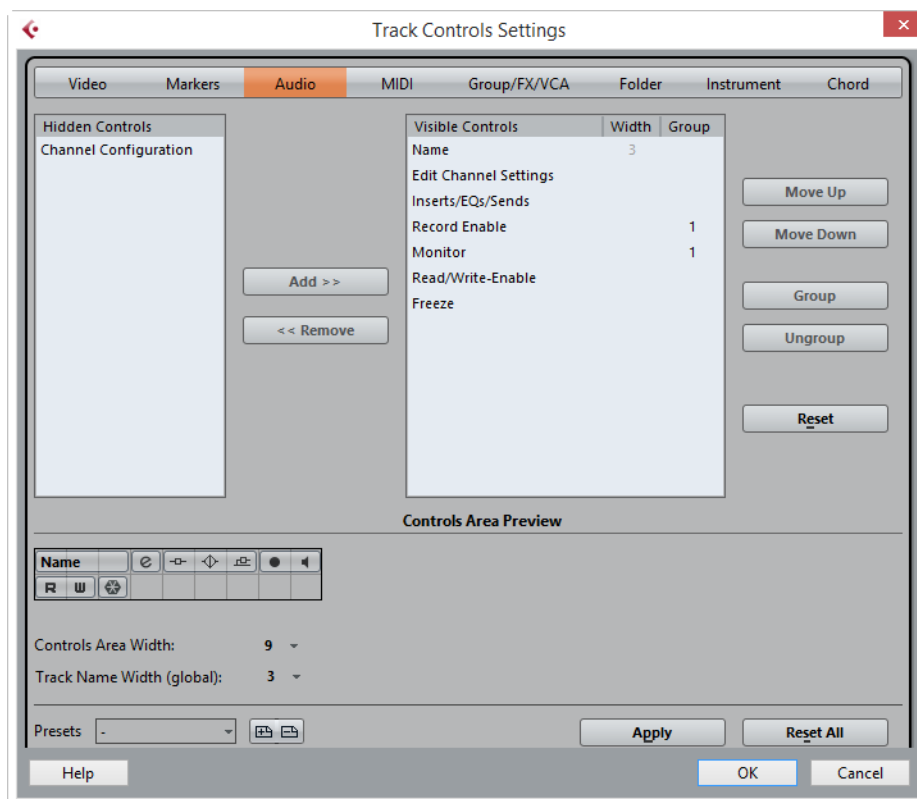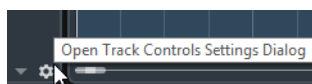
Track Type

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

Hidden Controls

This section displays controls currently hidden in the track list.

Visible Controls

This section displays controls currently visible in the track list.

Width

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

Group

Displays the group number.

Add

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

Remove

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

Move Up/Move Down

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

Group

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

Ungroup

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

Reset

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

Controls Area Preview

Shows a preview of the customized track controls.

Controls Area Width

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

Presets

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

Track Name Width (global)

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

Apply

Applies your settings.

Reset All

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

Track Handling

Adding Tracks

PROCEDURE

1. Select **Project > Add Track**, or right-click the track list.
2. Do one of the following:
   - Add a track of a specific type.

     For some track types a dialog opens that allows you to insert several tracks at once.
   - To add a track based on a track preset, select **Add Track Using Track Preset**.

     The **Choose Track Preset** dialog opens that allows you to select a track preset. The number and type of added tracks depends on the selected track preset.

RESULT

The track is added to the project.

RELATED LINKS

Add Track Dialog

The **Add Track** dialog opens when you add audio, MIDI, group/FX channel, or instrument tracks.
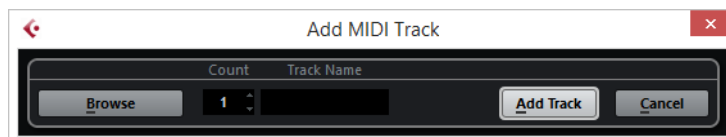
Browse

Expands the dialog and allows you to select a track preset for the track.

Count

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

Configuration

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

Speakers

Shows the speaker names according to the track configuration.

Track Name

Allows you to specify a track name.

Add Track

Adds the track and closes the dialog.

RELATED LINKS
[Track Presets on page 101](#)

Removing Tracks

You can remove selected or empty tracks from the track list.

▪ To remove selected tracks, select **Project > Remove Selected Tracks** or right-click the track that you want to remove, and from the context menu select **Remove Selected Tracks**.

▪ To remove empty tracks, select **Project > Remove Empty Tracks**.

Moving Tracks in the Track List

You can move tracks up or down in the track list.

PROCEDURE

▪ Select a track and drag it up or down in the track list.

Renaming Tracks

PROCEDURE

1. Double-click the track name and type in a new name for the track.
2. Press [Return].

   If you want all events on the track to get the same name, hold down any modifier key and press [Return].

AFTER COMPLETING THIS TASK

If the **Parts Get Track Names** option (**File > Preferences > Editing**) is activated, and you move an event from one track to another, the moved event will automatically be named according to its new track.

Coloring Tracks

All new tracks are automatically assigned a color according to the **Auto Track Color Mode** settings. However, you can change the track color manually.

- To change the color for the selected track, use the **Select Colors** pop-up menu on the toolbar.
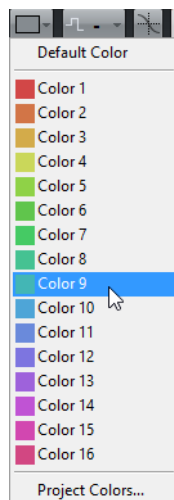
- You can also use the Track Color Selector. In the **Inspector**, click the arrow to the right of the track name and select a color.

  In the track list, [Ctrl]/[Command]-click in the left area and select a color.
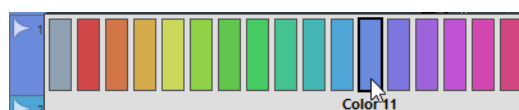
- To control which colors are used for new tracks, select **File > Preferences > Event Display > Tracks** and edit the **Auto Track Color Mode** settings.

Showing Track Pictures

You can add pictures to tracks to recognize your tracks easily. Track pictures are available for audio, instrument, MIDI, FX channel and group channel tracks.

PREREQUISITE

Adjust the track height to at least 2 rows.

PROCEDURE

1. Right-click any track in the track list.

2. From the track list context menu, select **Show Track Pictures**.
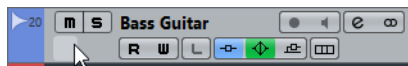
   If you move the mouse to the left on a track, a highlighted rectangle appears.

AFTER COMPLETING THIS TASK

Double-click the rectangle to open the **Track Pictures Browser** and set up a track picture.

RELATED LINKS

Track Pictures Browser

The **Track Pictures Browser** allows you to set up and select pictures that can be shown in the track list and in the MixConsole. Track pictures are useful to recognize tracks and channels easily. You can select pictures from the factory content or add new ones to the user library.

- To open the **Track Pictures Browser** for a track, double-click in the lower left side of the track list.
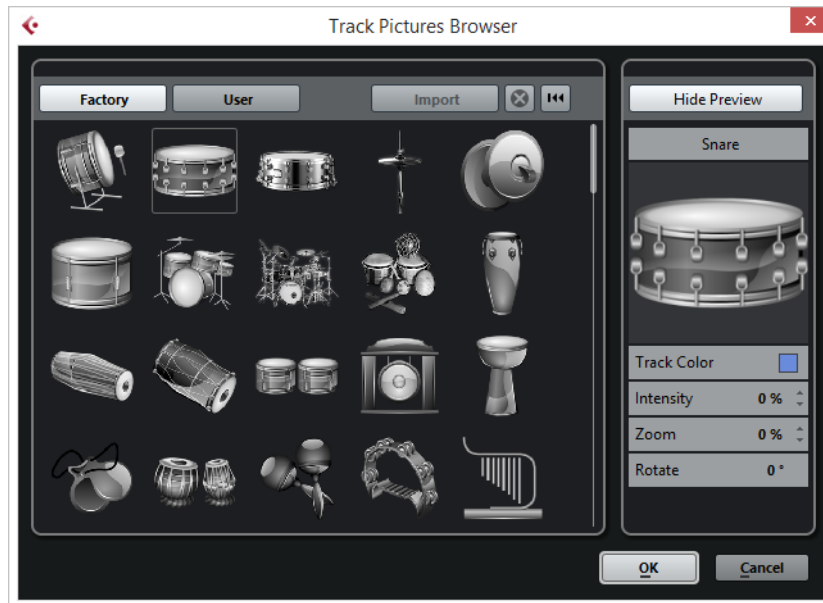
Factory

Shows the factory content in the pictures browser.

Pictures Browser

Shows the pictures that you can assign to the selected track/channel.

User

Shows your user content in the pictures browser.

Import

Opens a file dialog that allows you to select pictures in bmp, jpeg, or png format and add them to the user library.

Remove Selected Pictures from User Library

Removes the selected picture from the user library.

Reset Current Picture

Removes the picture from the selected track/channel.

Show/Hide Preview

Opens/Closes a section with further color and zoom settings.

Track Picture Preview

Shows the current track picture. When you zoom in the picture, you can drag it with the mouse to change its visible part.

Track Color

Opens the **Track Color Selector**. Click the rectangle to change the track color.

Intensity

Allows you to apply the track color to the track picture and set the color intensity.

Zoom

Allows you to change the size of the track picture.

Rotate

Allows you to rotate the track picture.

Setting the Track Height

You can enlarge the track height to show the events on the track in detail, or you can decrease the height of several tracks to get a better overview of your project.

- To change the height of an individual track, click its lower border in the track list and drag up or down.

- To change the height of all tracks simultaneously, hold down [Ctrl]/[Command], click the lower border of one track, and drag up or down.

- To set the number of tracks to view in the **Project** window, use the track zoom menu.

- To set the track height automatically when you select a track, click **Edit > Enlarge Selected Track**.

RELATED LINKS
Track Zoom Menu on page 96
Customizing Track Controls on page 88

Track Zoom Menu

The track zoom menu allows you to set the number of tracks and the track height in the **Project** window.

- To open the track zoom menu in the lower right of the **Project** window, click the arrow button above the vertical zoom control.
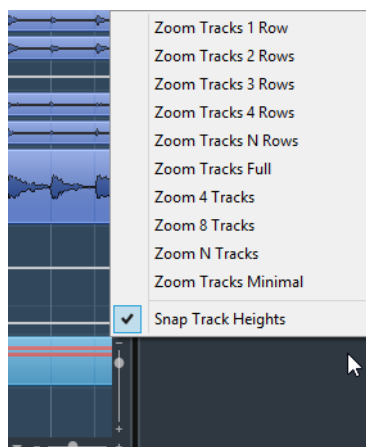
The following options are available:

Zoom Tracks x Rows

Zooms all track heights to show the specified number of rows.

Zoom Tracks Full

Zooms all tracks to fit in the active **Project** window.

Zoom x Tracks

Zooms the specified number of tracks to fit in the active **Project** window.

Zoom N Tracks

Allows you to set the number of tracks to fit in the active **Project** window.

Zoom Tracks Minimal

Zooms all track heights to the minimum size.

Snap Track Heights

Changes the track height in fixed increments when you resize it.

Selecting Tracks

- To select a track, click on it in the track list.

- To select several tracks, [Ctrl]/[Command]-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 indicated by a light gray color in the track list.

RELATED LINKS

Selecting Tracks with Arrow Keys

You can select tracks and events with the up/down arrow keys on the computer keyboard. However, you can make the up/down arrow keys exclusively available for selecting tracks.

- To make the up/down arrow keys exclusively available for selecting tracks, select **File > Preferences > Editing** and activate **Use Up/Down Navigation Commands for selecting Tracks only**.

The following applies:

- When this option is deactivated and no event/part is selected in the **Project** window, the up/down arrow keys on the computer keyboard are used to step through the tracks in the track list.

- When this option is deactivated and an event/part is selected in the **Project** window, the up/down arrow keys still step through the tracks in the track list – but on the currently selected track, the first event/part will automatically be selected as well.

- When this option is activated, the up/down arrow keys are only used to change the track selection – the current event/part selection in the **Project** window will not be altered.

Duplicating Tracks

You can duplicate a track with all contents and channel settings.

PROCEDURE

- Select **Project > Duplicate Tracks**.

RESULT

The duplicated track appears below the original track.

Disabling Audio Tracks (Cubase Elements only)

You can disable audio tracks that you do not want to play back or process at the moment. Disabling a track zeroes its output volume and shuts down all disk activity and processing for the track.

PROCEDURE

- Right-click in the track list and select **Disable Track** from the context menu.

RESULT

The track color changes and the corresponding channel in the **MixConsole** is hidden.

To enable a disabled track and restore all channel settings, right-click in the track list and select **Enable Track**.

Organizing Tracks in Folder Tracks

You can organize your tracks in folders by moving tracks into folder tracks. This allows you to perform editing on several tracks as one entity. Folder tracks can contain any type of track including other folder tracks.

▪	To create a folder track, open the **Project** menu and in the **Add Track** submenu select **Folder**.

▪	To 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

Handling Overlapping Audio

The basic rule for audio tracks is that each track can only play back a single audio event at a time. If two or more events overlap, you will only hear one of them: the one that is actually visible (e.g. the last lap of a cycle recording).

If you have a track with overlapping (stacked) events/regions, use one of the following methods to select the event/region that is played back:

- Open the context menu for the audio event in the event display and select the desired event or region from the **To Front** or **Set to Region** submenu.

  The available options depend on whether you performed a linear or a cycle recording and the record mode you used. When recording audio in cycle mode, the recorded event is divided in regions, one for each take.

- Use the handle in the middle of a stacked event and select an entry from the pop-up menu that appears.

How Events are Displayed on Folder Tracks

Closed folder tracks can display data of the contained audio, MIDI, and instrument tracks as data blocks or as events.

When you close folder tracks, the contents of the contained tracks are displayed as data blocks or events. Depending on the folder track height, the display of the events can be more or less detailed.

Modifying Event Display on Folder Tracks

You can modify the event display on folder tracks.

PROCEDURE

1. Right-click the folder track.
2. On the context menu, select **Show Data on Folder Tracks**.

   You have the following options:
   - **Always Show Data**

     If this option is activated, data blocks or event details are always displayed.
   - **Never Show Data**

     If this option is activated, nothing is displayed.
   - **Hide Data When Expanded**

     If this option is activated, the display of events is hidden when you open folder tracks.
   - **Show Event Details**

     If this option is activated, event details are displayed. If deactivated, data blocks are displayed.

   NOTE

   To change these settings, select **File > Preferences > Event Display > Folders**.

Track Presets

Track presets are templates that can be applied to newly created or existing tracks of the same type.

You can create them from virtually all track types (audio, MIDI, instrument, group, FX, VST instument return, input, and output channels). They contain sound and channel settings, and allow you to quickly browse, preview, select, and change sounds, or reuse channel settings across projects.

Track presets are organized in the MediaBay.

Audio Track Presets

Track presets for audio tracks, group tracks, FX tracks, VST instrument channels, input channels, and output channels include all settings that define the sound.

You can use the factory presets as a starting point for your own editing and save the audio settings that you optimized for an artist that you often work with as a preset for future recordings.

The following data is saved in audio track presets:

- Insert effects settings (including VST effect presets)

- EQ settings

- Volume and pan

NOTE

To access the track presets functions for input and output channels, activate the **Write** buttons for input and output channels in the MixConsole. This creates input and output channel tracks in the track list.

Instrument Track Presets

Instrument track presets offer both MIDI and audio features and are the best choice when handling sounds of simple, mono-timbral VST instruments.

Use instrument track presets for auditioning your tracks or saving your preferred sound settings, for example. You can also extract sounds from instrument track presets for use in instrument tracks.

The following data is saved in instrument track presets:

- Audio insert effects

- Audio EQ

- Audio volume and pan

- MIDI insert effects

- MIDI track parameters

- The VST instrument used for the track

- Staff settings

- Color settings

- Drum map settings

MIDI Track Presets

You can use MIDI track presets for multi-timbral VST instruments (not in Cubase LE).

When creating MIDI track presets you can either include the currently set channel or the currently set patch.

The following data is saved in MIDI track presets:

- MIDI modifiers (Transpose, etc.)

- Output and Channel or Program Change

- Volume and pan

- Staff settings

- Color settings

- Drum map settings

Multi-Track Presets

You can use multi-track presets, for example, when recording setups that require several microphones (a drum set or a choir, where you always record under the same conditions) and you have to edit the resulting tracks in a similar way. Furthermore, they can be used when working with layered tracks, where you use several tracks to generate a certain sound instead of manipulating only one track.

If you select more than one track when creating a track preset, the settings of all selected tracks are saved as one multi-track preset. Multi-track presets can only be applied if the target tracks are of the same type, number, and sequence as the tracks in the track preset, therefore, they should be used in recurring situations with similar tracks and settings.

VST Presets

VST instrument presets behave like instrument track presets. You can extract sounds from VST presets for use in instrument tracks.

The following data is saved in VST instrument presets:

- VST instrument

▪ VST instrument settings

NOTE

Modifiers, inserts, and EQ settings are not saved.

VST effect plug-ins are available in VST 3 and VST 2 format.

NOTE

In this manual, VST presets stands for VST 3 instrument presets, unless stated otherwise.

Applying Track Presets

When you apply a track preset, all the settings that are saved in the preset are applied.

Track presets can be applied to tracks of their own type only. The only exception are instrument tracks: for these, VST presets are also available.

NOTE

▪ Once a track preset is applied, you cannot undo the changes. It is not possible to remove an applied preset from a track and return to the previous state. If you are not satisfied with the track settings, you have to either edit the settings manually or apply another preset.

▪ Applying VST presets to instrument tracks leads to removal of modifiers, MIDI inserts, inserts, or EQs. These settings are not stored in VST presets.

Loading Track or VST Presets

PROCEDURE

1. In the **Project** window, select a track.

2. Do one of the following:
   ▪ In the **Inspector**, click **Load Track Preset**.
   ▪ In the track list, right-click the track and select **Load Track Preset**.

3. In the **Presets** browser, select a track or VST 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, the Windows Explorer, or the Mac OS Finder onto a track of the same type.

Loading Multi-Track Presets

PROCEDURE

1.   In the **Project** window, select several tracks.

NOTE

Multi-track presets can only be applied if track type, number, and sequence are identical for the selected tracks and the track preset.

2.   In the track list, right-click the track and select **Load Track Preset**.

3.   In the **Presets** browser, select a multi-track preset.

4.   Double-click the preset to load it.

RESULT

The preset is applied.

Extracting the Sound from an Instrument Track or VST Preset

For instrument tracks, you can extract the sound of an instrument track preset or VST preset.

PROCEDURE

1.   Select the instrument track to which you want to apply a sound.

2.   In the **Inspector**, click **VST Sound**.

3.   In the **Presets** browser, select an instrument track preset or VST preset.

4.   Double-click the preset to load the settings.

RESULT

The VST instrument and its settings (but no inserts, EQs, or modifiers) on the existing track are overwritten with the data of the track preset. The previous VST instrument for this instrument track is removed and the new VST instrument with its settings is set up for the instrument track.

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.

Parts and Events

Parts and events are the basic building blocks in Cubase.

The tracks in the Project window contain parts and/or events. Different event types are handled differently in the Project window:

- Video events and automation events (curve points) are always viewed and rearranged directly in the Project window.

- MIDI events can always be found in MIDI parts, which are containers for one or more MIDI events. MIDI parts are rearranged and manipulated in the Project window. To edit the individual MIDI events in a part, you have to open the part in a MIDI editor.

- Audio events can be displayed and edited directly in the Project window, but you can also work with audio parts containing several events. This is useful if you have a number of events which you want to treat as one unit in the project. Audio parts also contain information about the time position in the project.

NOTE

If the "Object Selection tool: Show Extra Info" option is activated in the Preferences dialog (Editing–Tools page), a tooltip will be shown for the Object Selection tool, displaying information depending on where you point it. For example, in the Project window event display, the tool will show the current pointer position and the name of the track and event you are pointing at.

The Preferences dialog contains several settings for customizing the display in the Project window.

RELATED LINKS

Audio Handling

When you work with audio files, it is crucial to understand how audio is handled in Cubase.

When you edit or process audio in the Project window, you always work with an audio clip that is automatically created on import or during recording. This audio clip refers to an audio file on the hard disk that itself remains untouched. This means, that audio editing and processing is "non-destructive", in the sense that you can always undo changes or revert to the original versions.

Audio Clips

An audio clip does not necessarily refer to just one original audio file!

If you apply some processing to a specific section of an audio clip, for example, this will create a new audio file containing only this section. The processing will then be applied to the new audio file only, leaving the original audio file unchanged. Finally, 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 feature makes it possible to undo processing at a later stage, and to apply different processing to different audio clips that refer to the same original file.

Audio Events

An audio event is the object that you place on a time position in Cubase.

If you make copies of an audio event and move them to different positions in the project, they will still all refer to the same audio clip. Furthermore, each audio event has an Offset value and a Length value. These determine at which positions in the clip the event will start and end, i.e. which section of the audio clip will be played back by the audio event. For example, if you resize the audio event, you will just change its start and/or end position in the audio clip – the clip itself will not be affected.

Audio Regions

An audio region is a section within a clip with a length value, a start time, and a snap point.

Audio regions are shown in the Pool and are best created and edited in the Sample Editor.

NOTE

If you want to use one audio file in different contexts, or if you want to create several loops from one audio file, convert the corresponding regions of the audio clip to events and bounce them into separate audio files. This is necessary since different events that refer to the same clip access the same clip information.

Parts

Parts are containers for MIDI or audio events, and for tracks.

RELATED LINKS
[Folder Parts on page 111](#)

Creating MIDI Parts

A MIDI part is automatically created when you record. It contains the recorded events. However, you can also create empty MIDI parts and later add events to them.

You can create MIDI parts in the following ways:

- Draw a part on a MIDI track with the Draw tool.

  You can also draw parts by pressing [Alt]/[Option] and using the Object Selection tool.

- Double-click with the Object Selection tool on a MIDI track, between the left and right locator.
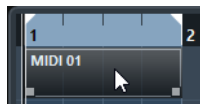
Adding Events to a MIDI Part

- To add events to a MIDI part, use the tools and functions in a MIDI editor.

RELATED LINKS
[MIDI Editors on page 433](#)

Creating Audio Parts

There is no way of automatically creating audio parts on recording. On recording audio events are created always.

You can create audio parts in the following ways:

- To gather existing audio events into a part, select **Audio > Events to Part**.
  This creates an audio part containing all selected audio events on the same track.

  To remove the part and make the events appear as independent objects on the track again, select the part and select **Audio > Dissolve Part**.

- Draw a part on an audio track with the Draw tool.
  You can also draw parts by pressing [Alt]/[Option] and using the Object Selection tool.

- Double-click with the Object Selection tool on an audio track, between the left and right locator.

NOTE

You can use copy and paste or drag and drop in the Audio Part Editor to add events to existing audio parts.

RELATED LINKS

Auditioning Audio Parts and Events

Audio parts and events can be auditioned in the Project window with the Play tool.

PROCEDURE

1. Select the Play tool.
2. Click where you want playback to start, and keep the mouse button pressed.

   Only the track on which you click is played back, starting at the click position.

   NOTE

   When auditioning, the Main Mix bus is used.

3. Release the mouse button to stop playback.

Adding Events to a Track

To add events to a track, do one of the following:

- Record.

- Drag and drop files on the track.

  You can drag from the following locations: the desktop, the **MediaBay** and its related windows, the **Pool**, the **Find media** dialog, another open **Project** window, the **Audio Part Editor**, the **Sample Editor** (press [Ctrl]/[Command] and drag to create an event of the current selection).

- Grab audio CD tracks and convert them to audio files.

- Use **Copy** and **Paste** on the **Edit** menu.

  This allows you to copy all kinds of events between projects. You can also copy events within the project, for example, from the **Sample Editor**.

- Draw marker or automation tracks.

  For audio, MIDI, and instrument tracks, you can only draw parts.

109

▪ Import audio or video files via the **File > Import** menu.

When you import a file this way, a clip is created for the file and an event that plays the whole clip is inserted on the selected track, at the position of the project cursor.

▪ Import audio or video files via the **File > Import** menu.

RELATED LINKS

Scrubbing

Scrubbing can be quite a burden on your system. If playback problems occur, try deactivating the "Use High Quality Scrub Mode" option in the Preferences dialog (Transport–Scrub page). The resampling quality will then be lower, but scrubbing will be less demanding on the processor. This can be useful when scrubbing in large projects.

You can adjust the volume of the Scrub function in the Preferences dialog (Transport–Scrub page).

When scrubbing with the mouse, insert effects are always bypassed.

Using the Scrub Tool

The Scrub tool allows you to locate positions in MIDI or audio parts and in audio events by playing back, forwards or backwards, at any speed.

PROCEDURE

1. Select the Play tool and click a second time on the icon.
   A pop-up menu opens.

2. Select "Scrub".

3. Click your event or part and keep the mouse button pressed.
   The project cursor moves to the position where you click. The mouse pointer is not visible anymore.

4. Drag to the left or right.
   The project cursor moves correspondingly and the event or part is played back. The speed and thus the pitch of the playback depend on how fast you move the mouse.

   NOTE

   You can also scrub all audio and video tracks of your project with the Jog wheel and Shuttle Speed control on the Transport panel. In this case, MIDI events are ignored.

Folder Parts

A folder part is a graphic representation of events and parts on the tracks in the folder. Folder parts indicate the position and length of the events and parts, as well as on which track they are (their vertical position). If part colors are used, these are also shown in the folder part.

Editing Folder Parts

Any editing that you perform in the **Project** window to a folder part affects all the events and parts it contains.

You can select several folder parts and edit them at the same time. The editing you can perform includes:

- Moving a folder part.

  This moves its contained events and parts, possibly resulting in other folder parts, depending on how the parts overlap.

- Using cut, copy, and paste.

- Deleting a folder part. This will delete its contained events and parts.

- Splitting a folder part with the **Cut** tool.

- Gluing folder parts together with the **Glue** tool. This will only work if the adjacent folder parts contain events or parts on the same track.

- Resizing a folder part resizes the contained events and parts according to the selected resizing method.

- Muting a folder part. This will mute its contained events and parts.

Tracks inside a folder can be edited as one entity by performing the editing directly on the folder part containing the tracks. You can also edit individual tracks within the folder by showing the contained tracks, selecting parts and opening editors as usual.

- To open the editor for the track classes that are present in a folder part, double-click the folder part.

  All MIDI parts that are located on the tracks within the folder are displayed as if they were on the same track, just like when opening the **Key Editor** with several MIDI parts selected.

  To be able to discern the different tracks in the editor, give each track a different color in the Project window and use the **Part Colors** option in the editor.

  If the folder contains tracks with audio events and/or audio parts, the Sample and/or Audio Part Editors are opened with each audio event and audio part in a separate window.

RELATED LINKS
Coloring Notes and Events on page 436

Editing 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.

When you are using the tools for editing, you can in many cases get additional functions by pressing modifier keys (e.g. pressing [Alt]/[Option] and dragging with the **Object Selection** tool creates a copy of the dragged event).

NOTE

You can customize the default modifier keys in the **Preferences** dialog.

RELATED LINKS
Editing - Tool Modifiers on page 655

Selecting Events

You can select events using any of the following methods:

- Use the **Object Selection** tool.

- Use the **Select** submenu on the **Edit** menu.

- Right-click on a track and select **Select All Events** from the context menu.

- To select ranges, regardless of the event and track boundaries, use the **Range Selection** tool.

- Use the arrow keys on the computer keyboard.

- If the **Auto Select Events under Cursor** option (**File > Preferences > Editing**) is activated, all events on the selected tracks that are touched by the project cursor are automatically selected.

  This is helpful when rearranging your project, because it allows you to select whole sections on all tracks by selecting all tracks and moving the project cursor.

RELATED LINKS
Selecting with the Object Selection Tool on page 112
Select Submenu on page 113
Range Editing on page 124

Selecting with the Object Selection Tool

PROCEDURE

1. On the **Project** window toolbar, click **Object Selection**.
2. In the event display, click the events or parts that you want to select.
   The standard techniques apply.

Select Submenu

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

The following options are available, when the **Object Selection** tool is selected:

All

Selects all events in the **Project** window.

None

Deselects all events.

Invert

Inverts the selection – all selected events are deselected and all events that were not selected are selected instead.

In Loop

Selects all events that are partly or wholly between the left and right locator.

From Start to Cursor

Selects all events that begin to the left of the project cursor.

From Cursor to End

Selects all events that end to the right of the project cursor.

Equal Pitch

These are available in the MIDI editors and the **Sample Editor**.

Select Controllers in Note Range

This 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 track(s) that are touched by the project cursor.

Select Event

This is available in the **Sample Editor**.

Left/Right Selection Side to Cursor

These two functions are only used for range selection editing.

NOTE

When **Range Selection** tool is selected, the **Select** submenu features other functions.

RELATED LINKS

Removing Events

To remove an event from the **Project** window, do one of the following:

- Click on the event with the **Erase** tool.

- To delete all following events, but not the event that you clicked and all events before it, press [Alt]/[Option] and click on an event.

- Select the events and press [Backspace], or select **Edit > Delete**.

Moving Events

You can move events using any of the following methods:

- Use the **Object Selection** tool.

- Use the **Move to** submenu on the **Edit** menu.

- Select the event and edit the start position in the info line.

- Use the **Nudge** buttons on the toolbar.

RELATED LINKS

Moving with the Object Selection Tool

PROCEDURE

1. In the **Project** window toolbar, click **Object Selection**.
2. In the event display, click the events or parts you want to move, and drag to a new position.

   NOTE

   You can only drag events to tracks of the same type.

3. Optional: Hold down [Ctrl]/[Command] while dragging to restrict movement either horizontally or vertically.

RESULT

All selected events are moved, maintaining their relative positions. If Snap is activated, this determines to which positions you can move the events.

NOTE

To avoid accidentally moving events when you click on them in the **Project** window the response when you move an event by dragging is slightly delayed. You can adjust this delay with the **Drag Delay** setting (**File > Preferences > Editing**).

"Move to" Submenu

▪ To open the **Move to** submenu, select **Edit > Move to**.

The following options are available:

Cursor

Moves the selected event to the project cursor position. If there are several selected events on the same track, the first event will start at the cursor, and the following will be lined up end-to-start after the first one.

Origin

Moves the selected events to their original positions, i.e. the positions at which they were originally recorded.

Front/Back

This function does not actually change the position of the events, but moves the selected events to the front or back, respectively. This is useful if you have overlapping events and want to see one that is partially obscured. For audio events, this is an extra important feature, because only the visible sections of events will be played back. Moving an obscured audio event to front (or moving the obscuring event to back) will allow you to hear the whole event on playback.

Moving via the Info Line

PROCEDURE

1. In the event display, select the event or part that you want to move.
2. In the info line, double-click the **Start** field and enter a new value for the event start.
   The event is moved accordingly.

Moving with the Nudge Buttons

PROCEDURE

1. Right-click the **Project** window toolbar and activate **Nudge Palette**.
   The nudge buttons become available in the toolbar.

2. In the event display, select the events or parts that you want to move, and use the **Move Left/Move Right** nudge buttons.

    The selected events or parts are moved to the left or right.

Renaming Events

By default, audio events show the name of their clip, but you can enter a separate descriptive name for events.

- To rename an event, select the event and type in a new name in the **Name** field on the info line.

- To give all events on a track the same name as the track, change the track name, hold down a modifier key, and press [Return].

Resizing Events

Resizing events means to move their start or end positions individually.

The following resizing modes are available:

Normal Sizing	The contents of the event stay fixed, and the start or end point of the event is moved to "reveal" more or less of the contents.
Sizing Moves Contents	The contents follow the moved start or end of the event (see the figure below).
Sizing Applies Time Stretch	The contents will be time stretched to fit the new event length.

- To select one of the resizing modes, select the **Object Selection** tool and then click again on the **Object Selection** tool icon on the toolbar. This opens a pop-up menu from which you can select one of the options.
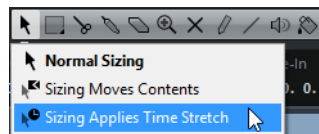
The toolbar icon indicates the resizing mode

IMPORTANT

When resizing events, any automation data not taken into account.

To resize events, do one of the following:

▪ Click and drag the lower left or right corner of the event.

If **Snap** is activated, the **Snap** value determines the resulting length. If several events are selected, all will be resized in the same way.

Normal sizing

Sizing moves contents

▪ Use the **Trim** buttons (**Nudge** palette) on the toolbar.

This will move the start or end position of the selected events by the amount set on the **Grid Type** pop-up menu. The sizing type currently selected applies to this method too, with the exception of **Sizing Applies Time Stretch** which is not possible with this method.
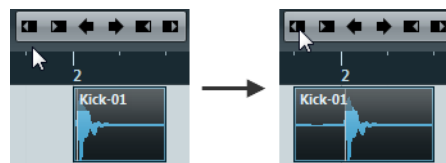
▪ Use the **Scrub** tool.

▪ Apply time stretch.

RELATED LINKS

Snap Function on page 39
Resizing Events Using Time Stretch on page 117

Resizing Events Using Time Stretch

Time stretching allows you to resize a part and make its contents fit the new size.

PROCEDURE

1. Click the **Object Selection** tool on the toolbar and click again to select the **Sizing Applies Time Stretch** option from the pop-up menu.

2. Point close to the end point of the part you want to stretch.

3. Click and drag left or right.

When you move the mouse, a tooltip shows the current mouse position and length of the part. Snap is taken into account.

4. Release the mouse button.

The part is stretched or compressed to fit the new length.

- For MIDI parts, this means that the note events are stretched (moved and resized).

  Controller data will be stretched, too.

- For audio parts, this means that the events are moved, and that the referenced audio files are time stretched to fit the new length.

  A dialog shows the progress of the time stretch operation.

Splitting Events

You can split events in the **Project** window in the following ways:

- Click with the **Cut** tool on the event you want to split.

  If Snap is activated, this determines the exact split position. You can also split events by pressing [Alt]/[Option] and clicking with the **Object Selection** tool.

- Select **Edit > Functions > Split at Cursor**.

  This splits the selected events at the position of the project cursor. If no events are selected, all events (on all tracks) that are intersected by the project cursor will be split.

- Select **Edit > Functions > Split Loop**.

  This splits events on all tracks at the left and right locator positions.

NOTE

If you split a MIDI part so that the split position intersects one or several MIDI notes, the result depends on the **Split MIDI Events** option (**File > Preferences > Editing > MIDI**). If the option is activated, the intersected notes will be split (creating new notes at the beginning of the second part). If it is deactivated, the notes will remain in the first part, but stick out after the end of the part.

RELATED LINKS

Gluing Events Together

No data will be kept in the clipboard.

The following options are available:

- To glue an event together with the next event on the track, click on an event with the Glue tool. The events do not have to touch one another.

  The result is a part containing the two events, with one exception: If you first split an event and then glue the two sections together again (without moving or editing them first), they become a single event again.

- You can select several events on the same track and click on one of them with the Glue tool.

  A single part is created.

- To glue an event together with all following events on this track, hold down [Alt]/[Option] and click on an event with the Glue tool.

Duplicating

Events can be duplicated in the following ways:

- Hold down [Alt]/[Option] and drag the event to a new position.

  If Snap is activated, this determines to which positions you can copy the events.

  NOTE

  If you hold down [Ctrl]/[Command] as well, movement direction is restricted to either horizontal or vertical. That means if you drag an event vertically it cannot be moved horizontally at the same time.

- Select **Edit > Functions > Duplicate** to create a copy of the selected event and place it directly after the original.

  If several events are selected, all of these are copied "as one unit", maintaining the relative distance between the events.

  NOTE

  When you duplicate audio events, the copies always refer to the same audio clip.

Cutting, Copying, and Pasting Events

You can cut or copy selected events, and paste them in again, using the functions on the **Edit** menu.

- When 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 will be inserted on its original track.

- If you use the **Paste at Origin** function (**Edit > Function**), the event is pasted at the position from which you cut or copied it.

- If you use the **Paste Relative to Cursor** function (**Edit > Function**), the event is pasted while keeping its relative position to the project cursor.

RELATED LINKS
Snap Function on page 39

Repeating

Events can be repeated in the following ways:

- Hold down [Alt]/[Option] and click the handle in the lower right corner of the last selected event and drag to the right.

- Select **Edit > Functions > Repeat** to open a dialog, allowing you to create a number of copies (regular or shared) of the selected events.

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.

Creating Shared Copies

You can create shared copies of audio and MIDI parts. If you edit the contents of a shared copy, all other shared copies of the same part are automatically edited in the same way.

- Hold down [Alt]/[Option]-[Shift] and drag to the right.

NOTE

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 can be edited independently) and adds this to the **Pool**.

Sliding the Contents of an Event or Part

You can move the contents of an event or part without changing its position in the Project window.

- To slide an event or part, press [Alt]/[Option]-[Shift], click in the event or part and drag to the left or right.

IMPORTANT

When sliding the contents of an audio event, you cannot slide past the start or end of the actual audio clip. If the event plays the whole clip, you cannot slide the audio at all.

Locking Events

If you want to make sure that you do not edit or move an event by accident, you can lock it.

Locking can affect one or any combination of the following properties:

Lock Option	Description
Position	If this is locked, the event cannot be moved.
Size	If this is locked, the event cannot be resized.
Other	If this is locked, all other editing of the event is disabled. This includes adjusting the fades and event volume, processing, etc.

- To specify which of these properties are affected by the **Lock** function, use the **Lock Event Attributes** pop-up menu (**File > Preferences > Editing**).
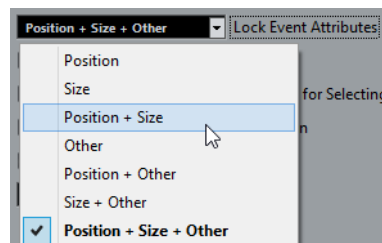
- To lock events, select them and select **Edit > Lock**.

  The events will be locked according to the options specified in the **Preferences** dialog.
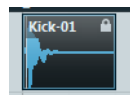
  The padlock symbol indicates that one or more of the lock options are activated for the event.

- To adjust the lock options for a locked event, select the locked event and select **Edit > Lock**.

  This opens a dialog in which you can activate or deactivate the desired lock options.

- To unlock an event (turn off all lock options), select the event and select **Edit > Unlock**.

- To lock a whole track, click the padlock symbol in the track list or in the Inspector.

  This disables all editing of all events on the track.

Muting Events

You can mute events in the **Project** window. Muted events can be edited as usual (with the exception of adjusting fades), but are not played back.

Muted events are grayed out.

▪ To mute events, select them and select **Edit > Mute**.

▪ To unmute events, select them and select **Edit > Unmute**.

▪ To mute or unmute a single event, click on it with the **Mute** tool.

▪ To mute or unmute several events, click in an empty area with the **Mute** tool and drag a selection rectangle around several events.

All selected events are muted.

▪ To change the mute status of selected events, [Shift]-click them.

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**.
     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.
   ▪ To create a new file and add a clip for the new file to the **Pool**, click **No**.
     The original event is not replaced.

NOTE

You can also apply the **Bounce Selection** function to an audio part. In that case, the audio from all events in the part will be combined into a single audio file. If you select **Replace** when asked, the part will be replaced with a single audio event playing a clip of the new file.

RELATED LINKS
[Creating fades on page 174](#)

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Region Operations

Regions are sections within a clip.

Regions are best created and edited in the **Sample Editor**. However, to access the following options, select **Audio > Advanced**.

Event or Range as Region

This function is available when one or several audio events or selection ranges are selected. It creates a region in the corresponding clip, with the start and end position of the region determined by the start and end position of the event or selection range within the clip.

Events from Regions

This function is available if you have selected an audio event whose clip contains regions within the boundaries of the event. The function will remove the original event and replace it with events positioned and sized according to the regions.

RELATED LINKS
Working with regions on page 293

Range Editing

Editing in the **Project** window is not restricted to handling whole events and parts. You can also work with selection ranges, which are independent from the event/part and track boundaries.

Creating a Selection Range

- To make a selection range, drag with the **Range Selection** tool.
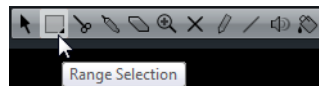
  When the Range Selection tool is selected, you can select selection ranges options via **Edit > Select**.

- To create a selection range that encompasses an event, double-click on an event with the **Range Selection** tool.

- To create a selection range that encompasses several events, hold down [Shift] and double-click several events in a row.

- To open an encompassed event for editing in the **Sample Editor**, double-click it.

RELATED LINKS

Selection Range Options

- To open the range selection options menu, select the **Range Selection** tool and select **Edit > Select**.

All

Makes a selection that covers all tracks, from the start of the project to the end. You can define the track length with the **Length** setting in the **Project Setup** dialog.

None

Removes the current selection range.

Invert

Inverts the selection. All selected events are deselected, and all events that were not selected are selected. Only used for event selection.

In Loop

Makes a selection between the left and right locator on all tracks.

From Start to Cursor

Makes a selection on all tracks, from the start of the project to the project cursor.

From Cursor to End

Makes a selection on all tracks, from the project cursor to the end of the project.

All on Selected Tracks

Selects all events on the selected track. Only used for event selection.

Select Event

This is available in the **Sample Editor**.

Left Selection Side to Cursor

Moves the left side of the current selection range to the project cursor position.

Right Selection Side to Cursor

Moves the right side of the current selection range to the project cursor position.

RELATED LINKS

Selecting Ranges for Several Tracks

You can create selection ranges that cover several tracks. It is also possible to exclude tracks from a selection range.

PROCEDURE

1. Create a selection range from the first to the last track.
2. Press [Ctrl]/[Command] and click in the selection range on the tracks that you want to exclude from the selection.

Editing Selection Ranges

Adjusting the Size of Selection Ranges

You can adjust the size of a selection range in the following ways:

- By dragging its edges.

  The pointer takes the shape of a double arrow when you move it over an edge of the selection range.

- By holding down [Shift] and clicking.

  The closest selection range edge will be moved to the position at which you clicked.

- By adjusting the selection range start or end position on the info line.

- By using the trim buttons on the toolbar.

  The left trim buttons move the start of the selection range and the right buttons move the end. The edges are moved by the amount specified on the **Grid** pop-up menu.

  NOTE

  The trim buttons are located on the **Nudge Palette**, which is not visible on the toolbar by default.

- By using the **Move Left** and **Move Right** buttons on the toolbar.

  These move the whole selection range to the left or the right. The amount of movement depends on the selected display format and the value specified on the **Grid** pop-up menu.

  IMPORTANT

  The contents of the selection are not moved. Using the **Move Left/Move Right** buttons is the same as adjusting the start and end of the selection range at the same time by the same amount.

  NOTE

  The move buttons are located on the **Nudge Palette**, which is not visible on the toolbar by default.

- To crop all events or parts that are partially within the selection range, select **Edit > Range > Crop**.

  Events that are fully inside or outside the selection range are not affected.

RELATED LINKS

Moving and Duplicating Selection Ranges

- To move a selection range, click and drag it to a new position.

    This will move the contents of the selection range to the new position. If the range intersected events or parts, these are split before moving, so that only the sections within the selection range are affected.

- To duplicate a selection range, hold down [Alt]/[Option] and drag.

    You can also use the duplicate, repeat, and fill loop functions that are available for duplicating events.

RELATED LINKS

Cutting, Copying, and Pasting Selection Ranges

You can cut or copy and paste selection ranges, using the functions on the **Edit** menu. You can also use the **Cut Time** and **Paste Time** options.

Cut

Cuts out the data in the selection range and moves it to the clipboard. The selection range is replaced by empty track space in the **Project** window, meaning that events to the right of the range keep their positions.

Copy

Copies the data in the selection range to the clipboard.

Paste

Pastes the clipboard data to the start position and track of the current selection. Existing events on the tracks remain at their original position.

Paste at Origin

Pastes the clipboard data back at its original position. Existing events on the tracks remain at their original position.

This option is available in **Edit > Functions**.

Cut Time

Cuts out the selection range and moves it to the clipboard. Events to the right of the removed range are moved to the left to fill the gap.

This option is available in **Edit > Range**.

Paste Time

Pastes the selection range from the clipboard to the start position and track of the current selection. Existing events are moved to make room for the pasted data.

This option is available in **Edit > Range**.

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Paste Time at Origin

Pastes the selection range from the clipboard to its original position. Existing events are moved to make room for the pasted data.

This option is available in **Edit > Range**.

Global Copy

This copies everything in the selection range.

This option is available in **Edit > Range**.

Deleting Data in Selection Ranges

You can delete selection ranges as follows:

- To replace data within the deleted selection range with empty track space, select **Edit > Delete** or press [Backspace].

  Events to the right of the range keep their position.

- To remove the selection range and make the events to the right move to the left to fill the gap, select **Edit > Range > Delete Time**.

Splitting Selection Ranges

- To split any events or parts that are intersected by the selection range, at the positions of the selection range edges, select **Edit > Range > Split**.

Inserting Silence

You can insert empty track space from the start of the selection range. The length of the silence equals the length of the selection range.

- To insert silence, select **Edit > Range > Insert Silence**.

  Events to the right of the selection range start are moved to the right to make room. Events that are intersected by the selection range start are split, and the right section is moved to the right.

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Playback and Transport

This chapter describes the methods for controlling playback and transport functions.

RELATED LINKS

Transport Panel

The **Transport** panel contains the main transport functions as well as many other options related to playback and recording.

- To show the transport panel, select **Transport > Transport Panel** or press [F2].

Transport Panel Sections

The **Transport** panel has different sections that you can show or hide by activating the corresponding options on the transport panel context menu.

- To show all **Transport** panel sections, right-click anywhere in the **Transport** panel and select **Show All**.

The following sections are available:

Virtual Keyboard

Allows you to play and record MIDI notes by using your computer keyboard or mouse.

Performance

Shows the audio processing load and the hard disk transfer rate.

Record Mode
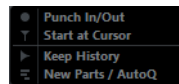
Determines what happens to your recordings and to any existing events on the track when you are recording. This section also contains the automatic MIDI record quantize function.

Locators
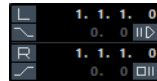
Allows you to go to the left or right locator position, and to activate **Auto Punch In** and **Auto Punch Out**.

Furthermore, you can set the left and right locator position numerically and specify a pre-roll and a post-roll value.

Jog/Scrub

The outer wheel is the **Shuttle Speed** control.

The middle wheel is the **Jog Wheel**.

The **Nudge** buttons **+** and **-** allow you to move the project cursor position to the right or left in steps of 1 frame.

Main Transport

Shows the basic transport controls as well as the time display options.

Arranger
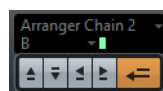
Shows the arranger functions.

Master + Sync
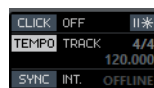
Shows the basic metronome, tempo, and synchronization options.

Marker
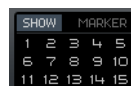
Shows the basic marker functions.

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MIDI Activity

Allows you to monitor the MIDI input and the MIDI output signals.

Audio Activity

Allows you to monitor the audio input and output signals.

Audio Level Control

Shows clipping indicators and an output level control.

Pre-Roll and Post-Roll

You can activate pre-roll and post-roll with the corresponding buttons in the **Locators** section on the **Transport** panel or by selecting **Transport > Use Pre-roll/Use Post-roll**.

▪ By setting a pre-roll value you instruct Cubase to roll back a short section whenever playback is activated.
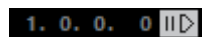
▪ By setting a post-roll value you instruct Cubase to play back a short section after automatic punch out before stopping.
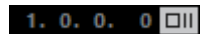
NOTE

This is only relevant if **Auto Punch Out** is activated on the **Transport** panel and **Stop after Automatic Punch Out** is activated (**File > Preferences > Transport**).

Using Pre-Roll and Post-Roll

PROCEDURE

1. Set the locators to where you want to start and end recording.

2. On the **Transport** panel, activate **Auto Punch In** and **Auto Punch Out**.

3. Select **File > Preferences > Transport** and activate **Stop after Automatic Punch Out**.

4. On the transport panel, click the **Pre-roll Amount** and the **Post-roll Amount** fields and enter the pre-roll and post-roll values.

5. Activate **Use pre-roll** and **Use post-roll**.

6. Activate **Record**.

RESULT

The project cursor rolls back by the time specified in the **Pre-roll Amount** field 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 time set in the **Post-roll Amount** field before stopping.

Playing Back with the Shuttle Speed Wheel

The shuttle speed wheel allows you to play back the project at up to four times the playback speed, forwards or backwards. This is a quick way to locate or cue to any position in the project.

▪ To start playback, turn the shuttle speed wheel to the right.

The further you turn the wheel, the faster the playback speed.

▪ To play the project backwards, turn the wheel to the left.

The further you turn the wheel, the faster the playback speed.

▪ To activate insert effects for scrubbing with the shuttle speed wheel, select **File > Preferences > Transport > Scrub** and activate **Use Inserts While Scrubbing**.

By default, insert effects are bypassed.

NOTE

You can also access the shuttle speed wheel via a remote control device.

Project Scrubbing - The Jog Wheel

The jog wheel allows you to move the playback position forwards or backwards, much like scrubbing on a tape deck. This helps you pinpoint exact locations in the project.

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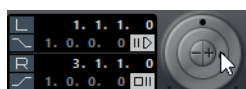
- To move to another playback position, turn the jog wheel to the left or right.

  The further you turn the jog wheel, the faster the playback speed. The original playback speed is the fastest speed possible. You can turn the jog wheel as many times as needed to move to a location.

  If you click the jog wheel during playback, playback automatically stops and scrubbing starts.

- To activate insert effects for scrubbing with the jog wheel, select **File > Preferences > Transport > Scrub** and activate **Use Inserts While Scrubbing**.

  By default, insert effects are bypassed.

NOTE

You can also access the jog wheel via a remote control device.

Transport Menu

The **Transport** menu contains several transport functions as well as many other options related to playback and recording.

Open Function

Transport Panel

Opens the **Transport** panel.

Locate Functions

Locators to Selection

Sets the locators to encompass the selection.

Locate Selection

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/Previous Marker

Moves the project cursor to the closest marker to the right or left.

Locate Next/Previous Hitpoint

Moves the project cursor to the next or to the previous hitpoint on the selected track.

Locate Next/Previous Event

Moves the project cursor to the next or to the previous event on the selected track.

Playback Functions

Post-roll from Selection Start/End

Starts playback from the beginning or end of the currently selected range and stops after the time set in the post-roll field on the transport panel.

Pre-roll to Selection Start/End

Starts playback from a position before the start or end of the currently selected range and stops at the selection start or end, respectively. The playback start position is set in the pre-roll field on the transport panel.

Play from Selection Start/End

Activates playback from the beginning or end of the current selection.

Play until Selection Start/End

Activates playback two seconds before the start or end of the current selection and stops at the selection start or end, respectively.

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.

Loop Selection

Activates playback from the start of the current selection and keeps starting over again when reaching the selection end.

Record Functions

Re-Record Mode

Activates/Deactivates the re-record mode that allows you to reinitiate a recording with a single click.

Start Recording at Left Locator

If this is activated, the project cursor locates to the left locator when you click the record button.

Use Pre-/Post-roll

Activates the pre-roll/post-roll.

Retrospective Record

Allows you to capture MIDI notes that you play in stop mode or during playback. Therefore, you need to enable the **Retrospective Record** option (**File > Preferences > Record > MIDI**).

Metronome Functions

Metronome Setup

Opens the **Metronome Setup** dialog.

Metronome On/Off

Activates/Deactivates the metronome click.

Precount On/Off

Activates/Deactivates the precount.

Synchronization Functions

Project Synchronization Setup

Opens the **Project Synchronization Setup** dialog.

Use External Sync

Sets Cubase to be synchronized externally.

Setting the Project Cursor Position

To move the project cursor, do one of the following:

- Use fast forward and rewind.

- Use the jog/shuttle/nudge control on the **Transport** panel.

- Drag the project cursor in the lower part of the ruler.

- Click in the ruler.

  Double-clicking in the ruler moves the cursor and starts/stops playback.

- If **Locate when Clicked in Empty Space** is activated (**File > Preferences > Transport**), you can click anywhere in an empty section of the **Project** window to move the cursor position.

- Change the value in any of the position displays.

- Use the position slider above the transport buttons in the **Transport** panel.
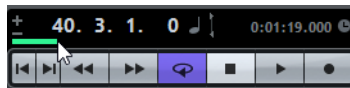
  The range of the slider relates to the length setting in the **Project Setup** dialog. Hence, moving the slider all the way to the right takes you to the end of the project.

- Use markers.

- Use the playback options.

- Cubase Elements only: Use the arranger function.

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- Use the functions on the **Transport** menu.

- Use key commands.

NOTE

If **Snap** is activated when dragging the project cursor, the snap value is taken into account. This is helpful for finding exact positions quickly.

RELATED LINKS

Left and Right Locators

The left and right locators are a pair of markers that you can use for specifying punch-in and punch-out positions, and cycle boundaries.

Locators are indicated by the flags in the ruler. The area between the locators is highlighted in the ruler and the event display.

If the right locator is positioned before the left locator, the area between the locators is shown in a different color.

Setting the Locators

There are several ways to set the locator positions.

To set the left locator, do one of the following:

- Drag the left handle in the ruler.

- Press [Ctrl]/[Command] and click at the position in the ruler.

- Adjust the **Left Locator Position** value on the **Transport** panel.

To set the left locator to the project cursor position, do one of the following:

- Press [Ctrl]/[Command], and on the numeric keypad press [1].

- Press [Alt]/[Option] and click **L** on the **Transport** panel.

To set the right locator, do one of the following:

- Drag the right handle in the ruler.

- Press [Alt]/[Option] and click at the position in the ruler.

- Adjust the **Right Locator Position** value on the **Transport** panel.

To set the right locator to the project cursor position, do one of the following:

- Press [Ctrl]/[Command] and on the numeric keypad press [2].

- Press [Alt]/[Option] and click **R** on the **Transport** panel.

To set both locators, do one of the following:

- Click and drag left or right in the upper half of the ruler.

- Select a range or an event and select **Transport > Locators to Selection**.

- Double-click a cycle marker.

Auto-Scroll

Auto-Scroll allows the waveform display to scroll during playback, keeping the project cursor visible in the window.

- To activate **Auto-Scroll**, click the **Auto-Scroll** button on the toolbar.

- To keep the project cursor in the middle of the screen, select **File > Preferences > Transport** and activate **Stationary Cursors**.

NOTE

Auto-Scroll is available in the toolbar of the **Project** window and in all editors.

Suspend Auto-Scroll when Editing

If you do not want the **Project** window display to change when editing during playback, you can activate **Suspend Auto-Scroll when Editing**.

The **Suspend Auto-Scroll when Editing** button is located to the right of the **Auto-Scroll** button.

When this option is activated, auto-scrolling is suspended as soon as you click anywhere in the event display during playback. As a visual feedback for that, the **Auto-Scroll** button turns orange.

As soon as playback stops or when you click the **Auto-Scroll** button again, Cubase will return to the normal **Auto-Scroll** behavior.

Time Formats

You can set up different time formats.

Selecting the Primary Time Format

In the **Transport** panel, you can select the primary time format. This is the global display format that is used for all rulers and position displays in the program, except the ruler tracks.

1.   In the main transport section of the **Transport** panel, click **Select Primary Time Format**.

2.   Select a time format from the pop-up menu.
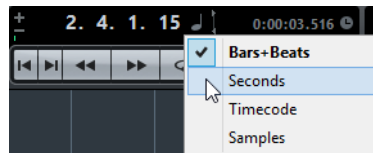
You can also select **Project > Project Setup > Display Format** to select the primary time format.

RESULT

The time format in the **Transport** panel and all rulers and position displays are updated.

Independent Time Displays (Cubase Elements only)

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

Switching the Primary and Secondary Time Format (Cubase Elements only)

▪ In the **Main Transport** section of the **Transport** panel, click **Exchange Time Format**.
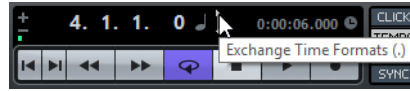
The primary and secondary time formats are switched and all rulers and position displays are updated.

Locating to Specific Time Positions

You have several possibilities to locate to specific time positions in the **Project** window.

▪ In the **Transport** panel, use the functions in the **Main Transport** section or in the **Jog/Scrub** section.

▪ In the **Transport** panel, use the position slider above the transport buttons.

▪ In the ruler, click the time position that you want to locate to.
Double-click to start/stop playback.

▪ In the lower part of the ruler, drag the project cursor.

▪ Use the following **Transport** menu functions: **Locate Selection/Locate Selection End**, **Locate Next/Previous Marker**, **Locate Next/Previous Hitpoint**, **Locate Next/Previous Event**.

▪ Use markers.

▪ Use the arranger functions.

▪ Use locators.
On the numeric keypad, press [1] to go to the left locator position, and press [2] to go to the right locator position.

On the **Transport** panel, click **L** to go to the left locator, and click **R** to go to the right locator.

If **Snap** is activated, the snap value is taken into account. This is helpful for finding exact positions quickly.

Metronome

You can use the metronome click as a timing reference. The two parameters that govern the timing of the metronome are tempo and time signature.

- To activate the metronome click, activate the **Click** button on the **Transport** panel.

  You can also select **Transport > Metronome On** or use the corresponding key command.

- To activate the precount, click the **Precount** button on the **Transport** panel.

  You can also select **Transport > Precount On** or set up a key command for this.

- To set up the metronome, select **Transport > Metronome Setup**.

Metronome Setup

You can make settings for the metronome in the **Metronome Setup** dialog.

- To open the **Metronome Setup** dialog, select **Transport > Metronome Setup**.
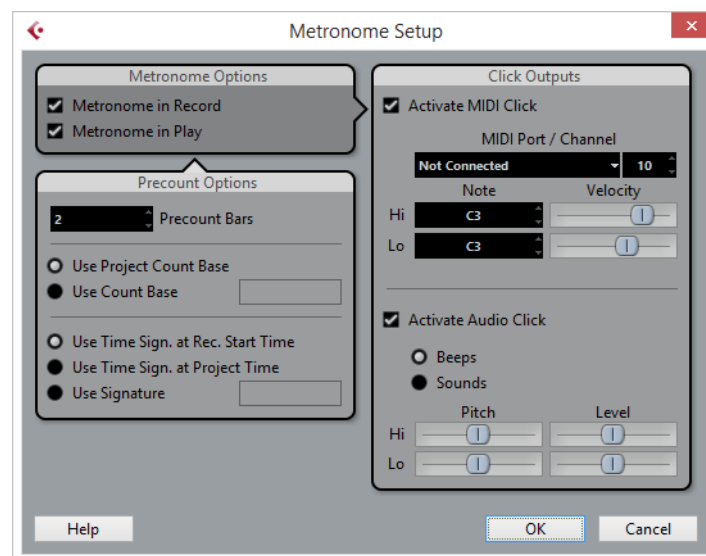
Metronome Options Section

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

Metronome in Record

Allows you to activate the metronome click during recording.

Metronome in Play

Allows you to activate the metronome click during playback.

Precount Options Section

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

Precount Bars

Allows you to set the number of bars that the metronome counts in before recording starts.

Use Project Count Base

Activate this to let the metronome play one click per beat according to the project count base.

Use Count Base

Activate this to set the rhythm of the metronome. For example, setting this to 1/8, gives you eighth notes (two clicks per beat).

Use Time Sign. at Rec. Start Time

Activate this to let the precount automatically use the time signature and tempo set at the position where recording starts.

Use Time Sign. at Project Time

Activate this to let the precount use the time signature set on the tempo track and apply any tempo changes on the tempo track during the precount.

Use Signature

Allows you to set a time signature for the precount. In this mode, tempo changes on the tempo track do not affect the precount.

Click Outputs Section

In the **Click Outputs** section, the following options are available:

Activate MIDI Click

Allows you to activate the MIDI click.

MIDI Port/Channel

Allows you to select a MIDI output and channel for the MIDI click. You can also select a VST instrument previously set up in the **VST Instruments** window.

Hi Note/Velocity

Allows you to set the MIDI note number and velocity value for the first beat in a bar, the high note.

Lo Note/Velocity

Allows you to set the MIDI note number and velocity for the other beats, the low notes.

Activate Audio Click

Allows you to activate the audio click that sounds via the audio hardware.

Beeps

Allows you to activate beeps generated by the program. Adjust the pitch and level of the beeps for the Hi (first) beat and Lo (other) beats using the sliders below.

Sounds

Allows you to load audio files for the Hi and Lo metronome sounds in the Sound fields below. The sliders set the level of the click.

Chase

Chase is a function that makes sure your MIDI instruments sound as they should when you locate to a new position and start playback. This is accomplished by the program transmitting a number of MIDI messages to your instruments each time that you move to a new position in the project, making sure all MIDI devices are set up correctly with regard to program change, controller messages (such as MIDI Volume), etc.

EXAMPLE

You have a MIDI track with a program change event inserted at the beginning. This event makes a synth switch to a piano sound.

At the beginning of the first chorus you have another program change event which makes the same synth switch to a string sound.

You now play back the song. It begins with the piano sound and then switches to the string sound. In the middle of the chorus you stop and rewind to some point between the beginning and the second program change. The synth now still plays the string sound although in this section it really should be a piano.

The **Chase** function takes care of that. If program change events are set to be chased, Cubase tracks the music back to the beginning, finds the first program change, and transmits it to your synth, setting it to the correct sound.

The same thing can apply to other event types as well. The **Chase Events** settings (**File > Preferences > MIDI**) determine which event types are chased when you locate to a new position and start playback.
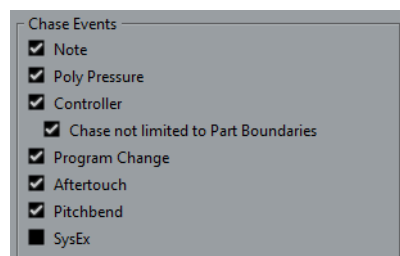
Activated event types are chased.

RELATED LINKS

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Virtual Keyboard

The Virtual Keyboard allows you to play and record MIDI notes by using your computer keyboard or mouse. This is useful if you have no external MIDI instrument at hand and you do not want to draw in notes with the Draw tool.

When the Virtual Keyboard is displayed, the usual key commands are blocked because they are reserved for the Virtual Keyboard. The only exceptions are:

- Save: [Ctrl]/[Command]-[S]

- Start/Stop Record: Num [*]

- Start/Stop Playback: [Space]

- Jump to left locator: Num [1]

- Delete: [Delete] or [Backspace]

- Cycle on/off: Num [/]

- Show/Hide Transport panel: [F2]

- Show/Hide Virtual Keyboard: [Alt]/[Option]-[K]

Recording MIDI With the Virtual Keyboard

PREREQUISITE

You have selected a MIDI or instrument track and activated **Record Enable**.

PROCEDURE

1. Select **Devices > Virtual Keyboard**.
   The Virtual Keyboard is displayed in the Transport panel.

2. On the **Transport** panel, activate **Record**.

3. Perform one of the following actions to enter some notes:
   - Click with the mouse on the keys of the virtual keyboard.
   - Press the corresponding key on your computer keyboard.

   NOTE

   Press several keys simultaneously to enter polyphonic parts. The maximum number of notes that can be played at one time varies between the different operating systems and hardware configurations.

Close the virtual keyboard to make all key commands available again.

Virtual Keyboard Options
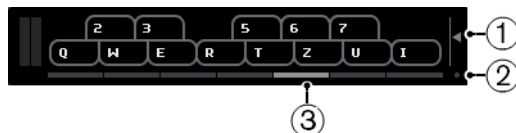
1) **Note Velocity Level**

   This slider allows you to adjust the volume of the virtual keyboard. You can also use the up and down arrow keys for this.

2) **Change Virtual Keyboard Display Type**

   This button allows you to switch between computer keyboard and piano keyboard display mode.

   The computer keyboard mode, you can use the two rows of keys that are displayed on the Virtual Keyboard to enter notes.

   The piano keyboard has a wider range of keys. It allows you to enter more than one voice simultaneously. You can also use the [Tab] key for this.

3) **Octave Offset**

   These buttons allow you to switch the keyboard range to a lower or higher octave. You have seven full octaves at your disposal. You can also use the left and right arrow keys for this.

4) **Pitchbend/Modulation Sliders**

   These sliders are only available in piano keyboard mode. They allow you to introduce pitchbend and modulation. You can also click on a key, hold the mouse button pressed until the mouse pointer becomes a cross-hair cursor and drag upwards/downward to introduce modulation or drag left/right to create pitchbend.

Recording

In Cubase, you can record audio and MIDI.

This chapter assumes that you are familiar with certain basic recording concepts and that some initial preparations have been made.

- Set up, connect, and calibrate your audio hardware.

- Open a project and set up the project setup parameters according to your specifications.

  Project setup parameters determine the record format, sample rate, project length, etc. that affect the audio recordings that you make during the course of the project.

- If you plan to record MIDI, set up and connect your MIDI equipment.

RELATED LINKS

Basic Recording Methods

This section describes the general recording methods.

Record Enabling Tracks

To be able to record, you must record-enable the tracks on which you want to record.

- To record-enable a track, activate the **Record Enable** button in the track list, in the Inspector, or in the MixConsole.

- To record-enable all audio tracks simultaneously, set up a key command for **Activate Record Enable for all Audio Tracks** in the **Mixer** category of the **Key Commands** dialog and use it.

- To record-enable audio or MIDI tracks on selection, activate the **Enable Record on Selected Audio Track** or the **Enable Record on Selected MIDI Track** option (**File > Preferences > Editing > Project & MixConsole**).

NOTE

The exact number of audio tracks that you can record simultaneously depends on your computer CPU and hard disk performance. Activate the **Warn on Processing Overloads** option (**File > Preferences > VST**) to show a warning message as soon as the CPU overload indicator lights up during recording.

RELATED LINKS

Activating Recording

You can activate recording manually or automatically.

Activating Recording Manually

▪ To activate recording, click the **Record** button on the **Transport** panel or on the toolbar. You can also use the corresponding key command, by default [*] on the numeric keypad.

Recording starts from the current cursor position.

NOTE

When you start recording in **Stop** mode, you can start recording from the left locator by activating **Start Record at Left Locator** on the **Transport** menu. The pre-roll setting or the metronome count-in will be applied.

Activating Recording Automatically

Cubase can automatically switch from playback to recording at a given position. This is useful if you must replace a section of a recording and want to listen to what is already recorded up to the recording start position.

PROCEDURE

1. Set the left locator to the position where you want to start recording.

2. Activate the **Punch In** button on the **Transport** panel.

3. Activate playback from any position before the left locator.
   When the project cursor reaches the left locator, recording is automatically activated.

Stopping Recording

- To stop recording and playback, click the **Stop** button on the **Transport** panel or use the corresponding key command, by default [0] on the numeric keypad.

- To stop recording and continue playback, click the **Record** button or use the corresponding key command, by default [*] on the numeric keypad.

- To stop recording automatically when the project cursor reaches the right locator and continue playback, activate the **Punch Out** button on the **Transport** panel.

Cycle Recording

You can record in a cycle, that is you can record a selected section repeatedly and seamlessly.

PREREQUISITE

A cycle is set up with the left and right locators.

PROCEDURE

1. Click the cycle button 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

Using Pre-Roll and Post-Roll

You can set up a pre-roll and a post-roll for recording.

PREREQUISITE

Select **File > Preferences > Transport** and activate the **Stop after Automatic Punch Out** option.

PROCEDURE

1. Set the locators to where you want to start and end recording.
2. On the **Transport** panel, activate **Auto Punch In** and **Auto Punch Out**.
3. Activate **Use Pre-roll** and **Use Post-roll**.
4. Specify a **Pre-roll Amount** and a **Post-roll Amount**.
5. Click **Record**.

RESULT

The project cursor rolls back and starts playback at the time that has been set as pre-roll amount. When the cursor reaches the left locator, recording is automatically activated. When the cursor reaches the right locator, recording is deactivated, and the playback continues as long as the time that has been set as post-roll amount.

Common Record Modes

The **Common Record Modes** determine what happens if you click the **Record** button during an audio or MIDI recording.

- In the **Transport** panel, click the upper part of the **Record Modes** section to open the **Common Record Modes** pop-up menu.
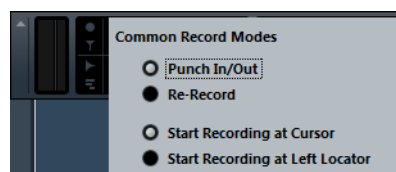
Punch In/Out

In this mode, the recording is stopped.

Re-Record

In this mode, the recording is reinitiated, the events are removed and recording is restarted from the exact same position.

Start Recording at Cursor

In this mode, recording starts from the cursor position.

Start Recording at Left Locator

In this mode, recording starts from the left locator.

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Re-Recording

PROCEDURE

1. Activate **Transport > Re-Record**.

2. Activate recording.

3. Hit the **Record** button again to restart recording.

RESULT

The project cursor jumps back to the record start position and recording is reinitiated. Pre-roll and pre-count settings are taken into account.

NOTE

The previous recordings are removed from the project and cannot be retrieved using **Undo**. However, they remain in the **Pool**.

Monitoring

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

The following ways of monitoring are available.

▪   Via Cubase.

▪   Externally by listening to the signal before it reaches Cubase.

▪   By using ASIO Direct Monitoring.

    This is a combination of both other methods.

Monitoring via Cubase

If you use monitoring via Cubase, the input signal is mixed with the audio playback. This requires an audio hardware configuration with a low latency value.

PROCEDURE

1. In the track list, activate the **Monitor** button.
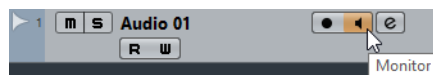
2. In the **MixConsole**, adjust the monitoring level and the panning.

    You can add effects and EQ to the monitor signal using the track's channel. If you are using plug-in effects with large inherent delays, the automatic delay compensation function in Cubase will increase the latency. If this is a problem, you can use the Constrain Delay Compensation function while recording.

3. Select **File > Preferences > VST**.

4. Open the **Auto Monitoring** pop-up menu and select a monitoring mode.

RESULT

The monitored signal will be delayed according to the latency value which depends on your audio hardware and drivers. You can check the latency of your hardware in the **Device Setup** dialog (**Device > Device Setup > VST Audio System**).

RELATED LINKS

VST on page 671

External Monitoring

External monitoring means listening to the input signal before it is sent into Cubase. It requires an external mixer for mixing the audio playback with the input signal. The latency value of the audio hardware configuration does not affect the monitor signal. When using external monitoring, you cannot control the level of the monitor signal from within Cubase or add VST effects or EQ to the monitor signal.

PROCEDURE

1. Select **File > Preferences > VST**.

2. Open the **Auto Monitoring** pop-up menu and select **Manual**.

3. Deactivate the **Monitor** buttons in Cubase.

4. On your mixing desk or mixer application for your audio hardware, activate the **Thru** or **Direct Thru** mode to send the input audio back out again.

ASIO Direct Monitoring

If your audio hardware is ASIO 2.0 compatible, it may support ASIO Direct Monitoring. This feature may also be available for audio hardware with Mac OS X drivers. In ASIO Direct Monitoring mode, the monitoring is done in the audio hardware, and monitoring is controlled from Cubase. The latency value of the audio hardware configuration does not affect the monitor signal when using ASIO Direct Monitoring.

PROCEDURE

1. In the track list, activate the **Monitor** button.
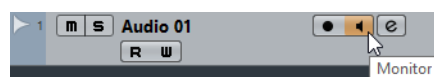
2. Select **Devices > Device Setup**.

3. In the **Device Setup** dialog, select your driver in the **Devices** list on the left to display the driver settings for your audio hardware, and activate the **Direct Monitoring** checkbox.

   If the checkbox is grayed out, your audio hardware (or its driver) does not support ASIO Direct Monitoring. Consult the audio hardware manufacturer for details.

4. Select **File > Preferences > VST.**

5. Open the **Auto Monitoring** pop-up menu and select a monitoring mode.

6. In the MixConsole, adjust the monitoring level and panning.

   Depending on the audio hardware, this might not be possible.

AFTER COMPLETING THIS TASK

You can monitor the input levels of audio tracks, that is, you can map the input bus metering to monitor-enabled audio tracks and watch the input levels of your audio tracks when working in the **Project** window.

▪ Select **File > Preferences > Metering** and activate **Map Input Bus Metering to Audio Track (in Direct Monitoring)**.

   As the tracks are mirroring the input bus signal you will see the same signal in both places. When using mapped metering, any functions that you apply to the audio track are not reflected in its meters.

NOTE

When using Steinberg hardware (MR816 series) in combination with ASIO Direct Monitoring, monitoring will be virtually latency-free. If you are using RME Audio Hammerfall DSP audio hardware, make sure that the pan law is set to -3 dB in the card's preferences.

RELATED LINKS

Monitoring MIDI Tracks

You can monitor everything you play and record though the MIDI output and channel that are selected for the MIDI track.

PREREQUISITE

Local Off is activated on your MIDI instrument.

PROCEDURE

1. Select **File > Preferences > MIDI.**

2. Make sure **MIDI Thru Active** is activated.

3. In the track list, activate the **Monitor** button.
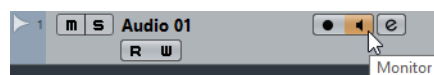
Incoming MIDI is echoed back out again.

Audio Recording Specifics

Preparations

Selecting a Record File Format

You can set up the record file format, that is the sample rate, bit resolution, and record file type for new audio files.

PROCEDURE

1. Select **Project > Project Setup.**
2. Set up the settings for **Sample Rate**, **Bit Resolution**, and **Record File Type**.

    IMPORTANT

    The bit resolution and file type can be changed at any time while the sample rate of a project cannot be changed at a later stage.

Setting the Audio Record Folder

Each Cubase project has a project folder containing an **Audio** folder. By default, this is where recorded audio files are stored. However, you can select record folders independently for each audio track if needed.

PROCEDURE

1. In the track list, select all tracks that you want to assign the same record folder.
2. Right-click one of the tracks to open the context menu.
3. Select **Set Record Folder**.
    A file dialog opens.

4. Navigate to the folder that you want to use as record folder or create a new folder with the **New Folder** button.

   If you want to have separate folders for different types of material (speech, ambient sounds, music, etc.), you can create subfolders within the project **Audio** folder and assign different tracks to different subfolders. This way, all audio files will still reside within the project folder, which will make managing the project easier.

Getting the Track Ready for Recording

Creating a Track and Setting the Channel Configuration

PROCEDURE

1. Select **Project > Add Track > Audio**.
2. In the **Count** field, enter the number of tracks that you want to add.
3. Open the **Configuration** pop-up menu and select a channel configuration.
4. Optional: Enter a track name.
5. Click **Add Track**.

RELATED LINKS

RAM Requirements for Recording

Each track on which you record requires a certain amount of RAM, and the memory usage increases the longer the recording lasts. For each audio channel, 2.4 MB of RAM are required for MixConsole settings, etc. The memory usage increases with the length of the recording, the sample rate, and the number of tracks you record. Consider the RAM limitation of your operating system when setting up your project for recording.

Selecting an Input Bus for the Track

Before you can record on your track, you must add and set up the required input busses and specify from which input bus the track will record.

PROCEDURE

1. In the **Inspector** for the audio track, open the **Input Routing** pop-up menu.
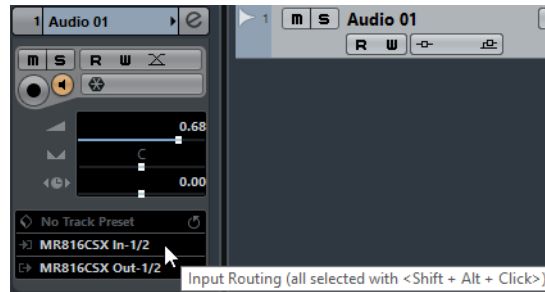
2. Select an input bus.

RELATED LINKS

Recording Audio

You can record audio using any of the basic recording methods.

When you finish recording, an audio file is created in the **Audio** folder within the project folder. In the Pool, an audio clip is created for the audio file, and an audio event that plays the whole clip appears on the recording track. Finally, a waveform image is calculated for the audio event. If the recording was very long, this may take a while.

NOTE

The waveform image will be calculated and displayed during the actual recording process. This realtime calculation uses some processing power. If your processor is slow or if you are working on a CPU-intensive project, select **File > Preferences > Record > Audio** and deactivate **Create Audio Images During Record**.

RELATED LINKS

Audio Record Modes

By selecting an **Audio Record Mode** you decide what happens to your recording and to any existing events on the track where you are recording. This is necessary because you will not always record on an empty track. There may be situations where you record over existing events, especially in cycle mode.

- To select an **Audio Record Mode**, click the audio symbol in **Record Mode** section of the **Transport** panel and select a record mode.

- To close the **Audio Record Mode** panel, click anywhere outside the panel.
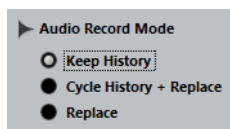
Keep History

Existing events or portions of events that are overlapped by a new recording are kept.

Cycle History + Replace

Existing events or portions of events that are overlapped by a new recording are replaced by the new recording. However, if you record in cycle mode, all takes from the current cycle recording are kept.

Replace

Existing events or portions of events that are overlapped by a new recording are replaced by the last recorded take.

Recording with Effects

Cubase allows you to add effects and/or EQ directly while recording. This is done by adding insert effects and/or making EQ settings for the input channel in the MixConsole.

IMPORTANT

If you record with effects, the effects become part of the audio file itself. You cannot change the effect settings after recording.

When you are recording with effects consider using 32-bit float format. This way, the bit resolution will not be reduced, which means there is no risk of clipping at this stage. Also, this preserves the signal quality perfectly. If you record in 16-bit or 24-bit format, the available headroom is lower, which means clipping can occur if the signal is too loud.

Undoing Recording

If you decide that you do not like what you just recorded, you can delete it.

▪ Select **Edit > Undo.**

This removes the events that you just recorded from the **Project** window and moves the audio clips in the Pool to the trash folder. To remove the recorded audio files from the hard disk, open the Pool, right-click the **Trash** icon and select **Empty Trash.**

RELATED LINKS
Pool Window on page 314

Recovering Audio Recordings

Cubase allows you to recover audio recordings in two situations: if you specified an audio pre-record time when you hit the record button too late and after a system failure during recording.

Specifying an Audio Pre-Record Time

You can capture up to 1 minute of any incoming audio that you play in Stop mode or during playback. This is possible because Cubase can capture audio input in buffer memory, even when not recording.

PROCEDURE

1. Select **File > Preferences > Record > Audio**.
2. Specify a time (up to 60 seconds) in the **Audio Pre-Record Seconds** field.
   This activates the buffering of audio input, making pre-record possible.
3. Make sure that an audio track is record-enabled and receives audio from the signal source.
4. When you have played some audio material that you want to capture (either in Stop mode or during playback), click the **Record** button.
5. Stop the recording after a few seconds.
   This creates an audio event that starts where the cursor position was when you activated recording. If you were in stop mode, and the cursor was at the beginning of the project, you may have to move the event to the right in the next step. If you were playing along to a project, you leave the event where it is.
6. Select the **Object Selection** tool and place the cursor on the bottom left edge of the event so that a double arrow appears. Then click and drag to the left.

RESULT

The event is now extended, and the audio that you played before activating the recording is inserted. This means that if you played along during playback, the captured notes end up exactly where you played them in relation to the project.

RELATED LINKS
Record - Audio on page 667

Recovering Audio Recordings after System Failure

Cubase allows you to recover audio recordings after a system failure, because of a power cut or other mishap, for example.

When you experience a computer crash during a recording, relaunch the system and check the project record folder. By default, this is the **Audio** subfolder inside the project folder. It should contain the audio file that you recorded, from the moment when you started recording to the time when your computer crashed.

NOTE

- This feature does not constitute an overall guarantee by Steinberg. While the program itself was improved in such a way that audio recordings can be recovered after a system failure, it is always possible that a computer crash, power cut, etc. might have damaged another component of the computer, making it impossible to save or recover any of the data.

- Do not try to actively bring about this kind of situation to test this feature. Although the internal program processes have been improved to cope with such situations, Steinberg cannot guarantee that other parts of the computer are not damaged as a consequence.

MIDI Recording Specifics

Preparations

The preparations described in the following sections mainly focus on external MIDI devices.

MIDI Instruments and Channels

Most MIDI synthesizers can play several sounds at the same time, each on a different MIDI channel. This allows you to play back several sounds (bass, piano, etc.) from the same instrument.

Some devices, such as General MIDI compatible sound modules, always receive on all 16 MIDI channels. If you have such an instrument, there is no specific setting to make in the instrument.

On other instruments, you must use the front panel controls to set up a number of parts, timbres, or similar so that they all receive on one MIDI channel.

For more information, see the manual that came with your instrument.

Naming MIDI Ports

MIDI inputs and outputs are often displayed with long and complicated names. In Cubase, you can rename your MIDI ports to more descriptive names.

PROCEDURE

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

2.   In the **Devices** list, select **MIDI Port Setup**.

     The available MIDI inputs and outputs are listed. On Windows systems, the device to choose depends on your system.

3.   Click in the **Show As** column and type in a new name.

4.   Click **OK**.

RESULT

The new port names appear on the **MIDI Input** and **Output Routing** pop-up menus.

Setting the MIDI Input

In the **Inspector**, you set the MIDI input for the track.

PROCEDURE

1.   In the track list, select the track to which you want to assign a MIDI input.

2.   In the topmost **Inspector** section, open the **Input Routing** pop-up menu and select an input.

     The available inputs on the menu depend on the type of MIDI interface that you are using. If you hold down [Shift]-[Alt]/[Option], the selected MIDI input is used for all selected MIDI tracks.

     NOTE

     If you select **All MIDI Inputs**, the track will receive MIDI data from all available MIDI inputs.

Setting the MIDI Channel and Output

The MIDI channel and output settings determine where the recorded MIDI is routed during playback. They are also relevant for monitoring MIDI in Cubase. You can select the channel and output in the track list or in the Inspector.

PROCEDURE

1. In the track list, select the track to which you want to assign a MIDI channel and output.

2. In the topmost **Inspector** section, open the **Output Routing** pop-up menu and select an output.

   The available outputs on the menu depend on the type of MIDI interface that you are using. If you hold down [Shift]-[Alt]/[Option], the selected MIDI output is used for all selected MIDI tracks.

3. Open the **Channel** pop-up menu and select a MIDI channel.

   NOTE

   If you select the **Any** MIDI channel, the MIDI material is routed to the channels that are used by your MIDI instrument.

Selecting a Sound

You can select sounds from within Cubase by instructing the program to send Program Change and Bank Select messages to your MIDI device.

PROCEDURE

1. In the track list, select the track to which you want to assign a sound.

2. In the track list or the **Inspector**, open the **Program Selector** pop-up menu and select a program.

   Program Change messages give access to 128 different program locations.

3. If your MIDI instruments have more than 128 programs, you can open the **Bank Selector** pop-up menu and select different banks, each containing 128 programs.

   NOTE

   Bank Select messages are recognized differently by different MIDI instruments. The structure and numbering of banks and programs may also vary. Refer to the documentation of your MIDI instruments for details.

RELATED LINKS
MIDI Track Inspector on page 68

Recording MIDI

You can record MIDI using any of the basic recording methods.

When you finish recording, a part that contains MIDI events is created in the **Project** window.

If you perform a live recording on a VST instrument, you usually compensate the latency of the audio card by playing earlier. In consequence, the timestamps are recorded too early. If you activate the **ASIO Latency Compensation** button 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

- Solo Record in MIDI Editors

- MIDI Record Catch Range in ms

- ASIO Latency Compensation Active by Default

You can find them on the **MIDI** and **Record–MIDI** page of the **Preferences** dialog.

RELATED LINKS

Recording Different Types of MIDI Messages

You can record different types of MIDI messages.

- To specify which event types are recorded, select **File > Preferences > MIDI > MIDI Filter** and deactivate the options for the type of MIDI message that you want to record.

RELATED LINKS

Recording MIDI Notes

If you press and release a key on your synthesizer or on another MIDI keyboard, the following messages are recorded:

- Note On (key down)

- Note Off (key up)

- MIDI channel

NOTE

Normally, the MIDI channel information is overridden by the MIDI channel setting for the track. However, if you set the track to the **Any** MIDI channel, the notes will be played back on their original channels.

Recording Continuous Messages

Pitchbend, aftertouch, and controllers, such as modulation wheel, sustain pedal, volume, etc. are considered as MIDI continuous events, as opposed to the momentary key down and key up messages.

You can record continuous messages together or independently from the notes, that is, afterwards or before.

You can record continuous messages on their own tracks, separately from the notes to which they belong. As long as you set the two tracks to the same output and MIDI channel, it will appear to the MIDI instrument as if you made the two recordings at the same time.

Recording Program Change Messages

When you switch from one program to another on your synthesizer or on another MIDI keyboard, a number corresponding to that program is sent out via MIDI as a Program Change message.

You can record Program Change Messages together or independently from the notes, that is, afterwards or before.

You can record Program Change Messages on their own tracks, separately from the notes to which they belong. As long as you set the two tracks to the same output and MIDI channel, it will appear to the MIDI instrument as if you made the two recordings at the same time.

Recording System Exclusive Messages

System Exclusive (SysEx) messages are special types of MIDI messages that are used to send data that only makes sense to a unit of a certain make and type.

SysEx can be used to transmit a list of the numbers that make up the settings of one or more sounds in a synth.

Reset Function

The **Reset** function sends out note-off messages and resets controllers on all MIDI channels. This is sometimes necessary if you experience hanging notes, constant vibrato, etc. when punching in and out on MIDI recordings with pitchbend or controller data.

- To perform a MIDI reset manually, select **MIDI > Reset**.

- If you want Cubase to perform a MIDI reset on stop, select **File > Preferences > MIDI** and activate **Reset on Stop**.

- If you want Cubase to insert a reset event at the end of a recorded part, select **File > Preferences > MIDI** and activate **Insert Reset Events after Record**.

  This resets controller data such as sustain, aftertouch, pitchbend, modulation, and breath control. This is useful if a MIDI part is recorded and the sustain pedal is still held after stopping recording. Usually, this would cause all following parts to be played with sustain, as the pedal off command was not recorded.

RELATED LINKS

MIDI Record Modes

By selecting a **MIDI Record Mode** you decide what happens to any existing parts on the track where you are recording. MIDI tracks can play back all events in overlapping parts. If you record several parts in the same locations or move parts so that they overlap, you will hear the events in all parts.
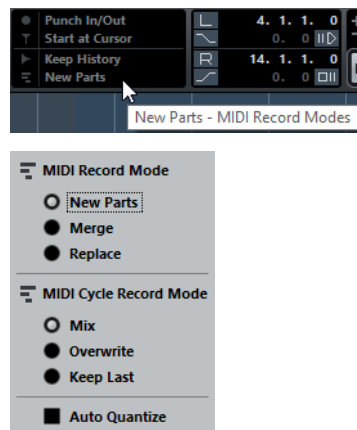
- To select a **MIDI Record Mode**, click the MIDI symbol in the left section of the **Transport** panel.

- To close the **MIDI Record Mode** panel again, click anywhere outside the panel.

MIDI Record Mode

New Parts

Existing parts that are overlapped by a new recording are kept. The new recording is saved as a new part.

Merge

Existing events in parts that are overlapped by a new recording are kept. The newly recorded events are added to the existing part.

Replace

Existing events in parts that are overlapped by a new recording are replaced.

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MIDI Cycle Record Mode

When you record MIDI in cycle mode, the result not only depends on the MIDI Record Mode, but also on the Cycle Record Mode that is selected in the **MIDI Cycle Record Mode** section.

Mix

For each completed lap, everything you record is added to what was previously recorded. This is useful for building up rhythm patterns. Record a hi-hat part on the first lap, the bass drum part on the second lap, etc.

Overwrite

As soon as you play a MIDI note or send any MIDI message, all MIDI that you have recorded on previous laps is overwritten from that point. Make sure that you stop playing before the next lap begins. Otherwise, you will overwrite the entire take.

Keep Last

Each completed lap replaces the previously recorded lap. If you deactivate recording or press **Stop** before the cursor reaches the right locator, the previous take will be kept. If you do not play or input any MIDI during a lap, nothing happens, and the previous take will be kept.

Quantizing MIDI Recordings

Cubase can automatically quantize MIDI notes on recording.
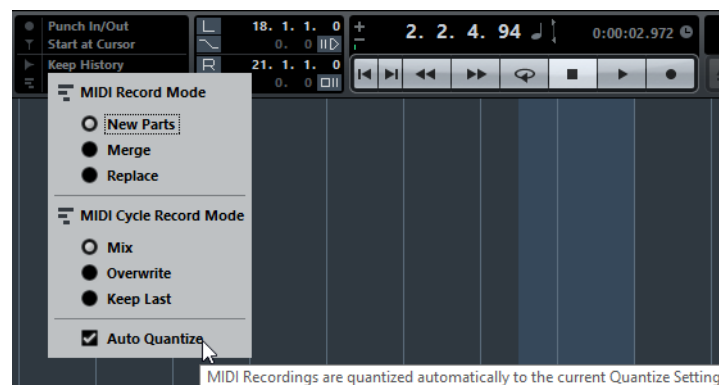
- To enable automatic quantizing, open the **Transport** panel and in the **Record Mode** section, activate **Auto Quantize**.

  The notes that you record are automatically quantized according to the Quantize settings.

RELATED LINKS

Recovering MIDI Recordings

Cubase allows you to recover MIDI recordings.

Enabling Retrospective Record

The **Retrospective Record** setting allows you to capture any MIDI notes that you play in Stop mode or during playback and turn them into a MIDI part after the fact. This is possible because Cubase can capture MIDI input in buffer memory, even when not recording.

PROCEDURE

1. Select **File > Preferences > Record–MIDI**.

2. Enable **Retrospective Record** and specify a **Retrospective Record Buffer Size**.
   This activates the buffering of MIDI input.

3. In the MIDI track list, activate the **Record Enable** button.

4. Play some MIDI material either in Stop mode or during playback.

5. Select **Transport > Retrospective Record**.

RESULT

The content of the MIDI buffer is turned into a MIDI part on the record-enabled track, and the captured notes end up exactly where you played them in relation to the project.

RELATED LINKS

Remaining Record Time

The **Record Time Max** display lets you see how much time you have 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 **Devices > Record Time Max**.

NOTE

The remaining record time is also shown in the status line above the track list.

If you use individual record folders to store your tracks on different drives, the time display refers to the medium with the least storage space available.

Lock Record

The **Lock Record** function prevents you from accidentally deactivating the record mode.

- Select **File > Key Commands** and in the **Transport** category, assign key commands to the **Lock Record** and **Unlock Record** commands.

If **Lock Record** is activated and you want to enter Stop mode, a dialog opens in which you need to confirm that you want to stop recording. You can also use the **Unlock Record** key command first and then enter Stop mode as usual.

NOTE

An automatic punch-out at the right locator position will be ignored in **Lock Record** mode.

Quantizing MIDI and Audio

Quantizing means moving recorded audio or MIDI and positioning it on the nearest grid position that is musically relevant. Quantizing is designed to correct errors, but you can also use it in a creative way.

You can quantize audio and MIDI to a grid or to a groove.

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.

- 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.

The Quantize function is found on the Edit menu. You can also use the key command [Q] or the "Quantize" button on the Quantize Panel.

RELATED LINKS

Quantizing Audio Event Starts on page 166
Quantizing MIDI Event Starts on page 167
Quantizing MIDI Event Lengths on page 167
Quantizing MIDI Event Ends on page 167

Quantizing Audio Event Starts

If you select audio events or a sliced loop and use the Quantize function, the audio events are quantized based on their snap points or event starts.

The snap points that do not match exact note positions on the selected grid are moved to the closest grid positions. The grid is set up on the Quantize pop-up menu. If no snap points are available, the event start is moved.

NOTE

If you use the Quantize function on an audio part, the event starts inside the part are quantized.

Quantizing MIDI Event Starts

If you select MIDI notes in a part and use the Quantize function on the Edit menu, the MIDI note starts are quantized, that is, the starts of MIDI notes that do not match exact note positions are moved to the closest grid positions. The grid is set up on the Quantize pop-up menu. The note lengths are maintained.

NOTE

If you quantize MIDI parts, all events are quantized, even if none is selected.

Quantizing MIDI Event Lengths

The "Quantize MIDI Event Lengths" function on the Edit menu, Advanced Quantize submenu, quantizes the lengths of MIDI notes without changing their start positions. At its most basic level, this function sets the lengths of the notes to the Length Quantize value on the MIDI editor toolbar by cutting off the note ends.

However, if you have selected the "Quantize Link" option on the "Length Quantize" pop-up menu, the function resizes the notes according to the quantize grid, taking the Swing, Tuplet, and Catch Range settings into account.

Quantizing MIDI Event Ends

The "Quantize MIDI Event Ends" function on the Edit menu, Advanced Quantize submenu, moves the ends of your MIDI notes to the nearest grid positions, taking the Quantize pop-up menu setting into account.

Quantize Panel

The Quantize Panel provides further parameters for defining how to quantize audio or MIDI. These parameters allow you to set up a more sophisticated quantization.

Using the Quantize Panel, you can quantize audio or MIDI to the grid or to a groove. Depending on what method you choose, different parameters are shown on the Quantize Panel. There is also a set of common settings.

You can open the Quantize Panel by clicking the corresponding button on the toolbar or by opening the Edit menu and selecting "Quantize Panel".
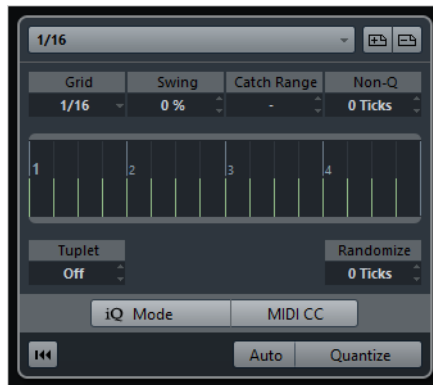
Common Settings

Quantize Presets Pop-Up Menu

On this pop-up menu, you can select a quantize or a groove preset.

Save/Remove Preset

The preset controls allow you to save the current settings as a preset, making them available on all "Quantize Presets" pop-up menus. This includes Swing, "Catch Range", etc.

▪ To save a preset, click the "Save Preset" button (the plus sign) to the right of the Quantize Presets pop-up menu.
A preset name is generated automatically, according to your settings.

▪ To rename a preset, open the "Quantize Presets" pop-up menu, select "Rename Preset" and enter the new name in the dialog that appears.

▪ To remove a user preset, select it and click the "Remove Preset" button.

Non-Quantize

This setting allows you to create a safe zone before and after the quantize positions, by specifying a "distance" in ticks (120 ticks = one 16th note). Events that lie within this zone are not quantized. This allows you to keep slight variations when you quantize, but correct notes that are too far away from the grid positions.

Grid Display

In the middle of the Quantize Panel the grid display is shown. The green lines indicate the quantize grid, that is, the positions that audio or MIDI is moved to.

Randomize

This setting 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.

MIDI CC

If you activate this button, controllers related to MIDI notes (pitchbend, etc.) are automatically moved with the notes when these are quantized.

Auto Apply

If you activate this button, any changes you make are immediately applied to the selected parts or events. A way of using this feature is to set up a playback loop and adjust the settings until you are satisfied with the result.

iQ Mode and Iterative Strength Setting

If you quantize your audio or MIDI with the "iQ Mode" (iterative quantize) option activated, a "loose" quantization is applied. This means that your audio or MIDI moves only part of the way to the closest quantize grid position. You can specify an "Iterative Strength" value to the right of the "iQ Mode" option. This value determines how close your audio or MIDI moves towards the grid.

NOTE

Iterative quantizing is based on the current, quantized positions and not on the original event positions. This makes it possible to repeatedly use iterative Quantize, gradually moving your audio or MIDI closer to the quantize grid until you have found the right timing.

Reset Quantize

This button is identical with the "Reset Quantize" function on the Edit menu.

IMPORTANT

If you move an audio event manually, the actual event start changes. Therefore, the "Reset Quantize" function has no effect on an event that was moved manually.

Quantize

Clicking this button applies your settings.

RELATED LINKS

Options For Quantizing to a Musical Grid
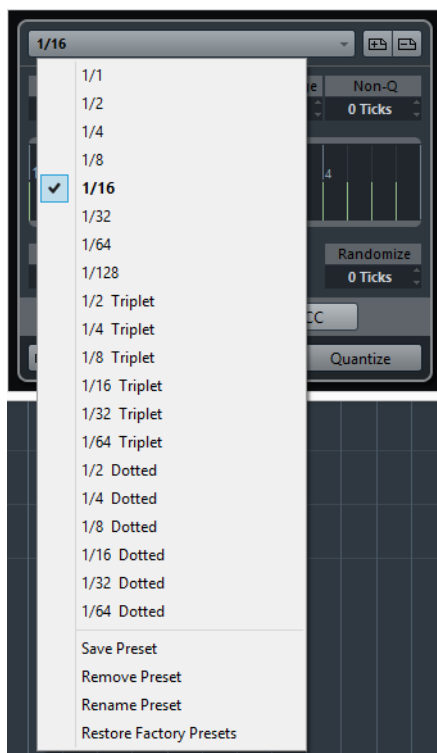
Grid

On this pop-up menu you can determine the basic value for the quantize grid.

Swing

This parameter lets you offset every second position in the grid, creating a swing or shuffle feel.

This setting is only available when a straight value is selected for the grid and Tuplet is off (see below).

Catch Range

This parameter allows you to specify that quantizing affects only audio or MIDI within a certain distance from the grid lines, the so-called catch range. This allows for complex quantization tasks, for example, if you want to quantize only the heavy beats near each beat, and not the events in-between.

With a value of 0%, all audio or MIDI is affected by quantizing. With higher percentages, wider catch ranges are shown around the green lines in the grid display.

Tuplet

This parameter allows you to create rhythmically more complex grids by dividing the grid into smaller steps, and thereby creating n-tuplets.

Options for Quantizing to a Groove

Groove quantizing is intended for recreating existing rhythmic feels by matching your recorded music to a timing grid generated from a MIDI part or an audio loop.

To extract the groove from a MIDI part, from an audio loop, an audio event with hitpoints, or sliced audio, select the material and drag it onto the grid display in the middle of the Quantize Panel. Alternatively, you can use the "Create Groove Quantize Preset" function.
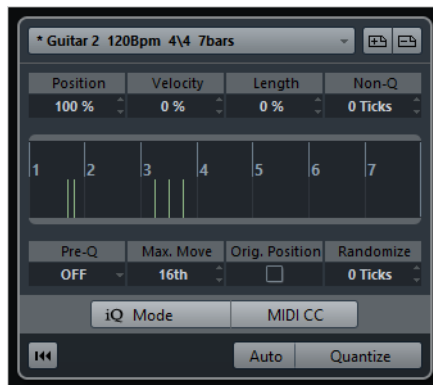
Position

This parameter lets you determine how much the timing of the groove affects the music. 0% means that the timing of the music remains unaffected, while 100% means that the timing is adjusted to match the groove completely.

Velocity (MIDI Only)

This parameter lets you determine how much the velocity values within the groove affect the music. Note that not all grooves contain velocity information.

Length (MIDI Only)

This parameter lets you specify how much the length of the notes is affected by the groove. This is done by modifying the note-off value.

NOTE

For drums, the Length setting is ignored as drum sounds cannot be sustained.

Pre-Quantize

This pop-up menu lets you quantize your audio or MIDI to a musical grid before groove quantizing. This helps you to get the notes closer to their groove destination.

For example, if you apply a shuffle groove to a 16th-note pattern, you can set up a Pre-Quantize value of 16 to straighten up the timing before applying the groove quantizing.

Max. Move

Here, you can select a note value to specify a maximum distance that the audio or MIDI is moved.

Orig. Position

If you activate this option, the starting point of the quantizing operation is not the first bar of the project, but the original starting position of the audio or MIDI material used to find the groove. This allows you to synchronize material that does not start from bar 1 of the project.

RELATED LINKS
[Creating Groove Quantize Presets on page 172](#)

Additional Quantizing Functions

Freezing MIDI Quantizing

The Freeze MIDI Quantize function on the Edit menu, Advanced Quantize submenu, makes the start and end positions of MIDI events permanent. This is useful in situations where you want to quantize a second time, based on the current quantized positions rather than the original positions.

Reset Quantize

This command on the Edit menu reverts your audio or MIDI to its original, unquantized state. This function is independent from the regular Undo History.

NOTE

The Reset function also resets any length changes that you performed using the "Scale Length/Legato" slider.

RELATED LINKS
[Length on page 449](#)

Creating Groove Quantize Presets

You can generate a groove quantize map based on hitpoints that you have created in the Sample Editor.

PROCEDURE

1. Open the Sample Editor for the audio event from which you want to extract the timing.
2. Create and edit hitpoints.
3. On the Hitpoints tab, click the "Create Groove" button.
    The groove is extracted.

RESULT

If you open the Quantize pop-up menu on the Project window toolbar, you will find an additional item at the bottom of the list, with the same name as the file from which you have extracted the groove. You can select it as a base for quantizing, just like any other quantize value.

AFTER COMPLETING THIS TASK

To save the groove, open the Quantize Panel and save it as a preset.

RELATED LINKS

RESULT

Fades and crossfades

Creating fades

There are two types of fade ins and fade outs in audio events in Cubase:
event-based fades that you create by using the fade handles and clip-based fades
created by processing.

RELATED LINKS
> Event-based fades on page 174
> Clip-based fades on page 176

Event-based fades

Selected audio events have triangular handles in the upper left and right corners.
These can be dragged to create a fade in or fade out, respectively.
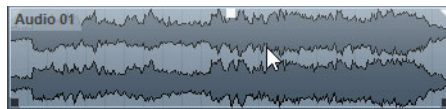
The fade handles are visible when you point the mouse at the event.
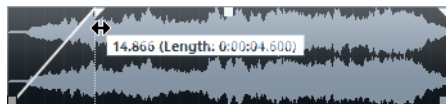
The fade is automatically reflected in the shape of the event's waveform, giving you
a visual feedback of the result when dragging the fade handle.

Fades created with the handles are not applied to the audio clip as such but
calculated in realtime during playback. This means that several events referring to
the same audio clip can have different fade curves. It also means that having a large
number of fades may require more processing power.

- If you select multiple events and drag the fade handles of one of them, the
  same fade is applied to all selected events.

- A fade can be edited in the Fade dialog, as described on the following pages.

  You open the dialog by double-clicking in the area above the fade curve, or by
  selecting the event and selecting "Open Fade Editor(s)" from the Audio menu (note
  that this will open two dialogs if the event has both fade in and fade out curves).

  If you adjust the shape of the fade curve in the Fade dialog, this shape will be
  maintained when you later adjust the length of the fade.

- You can make the fade longer or shorter at any time, by dragging the handle.

  You can do this without selecting the event first, i.e. without visible handles. Just move the mouse pointer along the fade curve until the cursor turns into a bidirectional arrow, then click and drag.

- If the "Show Event Volume Curves Always" option is activated in the Preferences dialog (Event Display–Audio page), fade curves are shown in all events, regardless of whether they are selected or not.

  If the option is deactivated, the fade curves are shown in selected events only.

- If the "Use Mouse Wheel for Event volume and Fades" option is activated in the Preferences dialog (Editing–Audio page), moving the mouse wheel moves the volume curve up or down.

  When you press [Shift] while moving the mouse wheel, and position the mouse pointer somewhere in the left half of the event, the fade in end point is moved. When the mouse pointer is in the right half of the event, the fade out start point is moved.

NOTE

In the Key Commands dialog (Audio category) you can set up key commands for changing the event volume curve and any fade curves.

RELATED LINKS
Key Commands on page 602

Creating and adjusting fades with the Range Selection tool

Event-based fades can also be created and adjusted with the Range Selection tool.

PROCEDURE

1. Select a section of the audio event with the Range Selection tool.

2. Open the Audio menu and select "Adjust Fades to Range".

   The result depends on your selection:
   - If you select a range from the beginning of the event, a fade in is created within the range.
   - If you select a range that reaches the end of an event, a fade out is created in the range.
   - If you select a range encompassing a middle section of the event, but not reaching neither the start nor the end, a fade in is created from the beginning of the event to the beginning of the selected range, and a fade out is created from the end of the selected range to the end of the event.

IMPORTANT

You can select multiple audio events on separate tracks with the Range Selection tool, and apply the fade to all of them simultaneously.

About the volume handle

A selected audio event also has a square handle in the top middle: the volume handle. It provides a quick way of changing the volume of an event in the Project window. Note that dragging the volume handle also changes the value on the info line.

The volume change is displayed numerically on the info line.
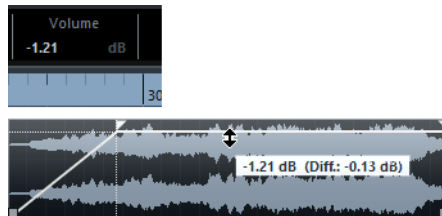
The event waveform reflects the volume change.

▪ Drag the Volume handle up or down to change the volume of the event.

Removing fades

▪ To remove the fades for an event, select the event and select "Remove Fades" from the Audio menu.

▪ If you want to remove the fades in a specific range only, select the fade area with the Range Selection tool and select "Remove Fades" from the Audio menu.

Clip-based fades

If you have selected an audio event or a section of an audio event (using the Range Selection tool), you can apply a fade in or fade out to the selection by using the "Fade In" or "Fade Out" function on the Process submenu of the Audio menu. These functions open the corresponding Fade dialog, allowing you to specify a fade curve. Fades created this way are applied to the audio clip rather than to the event.

IMPORTANT

The length of the fade area is determined by your selection. In other words, you specify the length of the fade before you open the Fade dialog. You can select multiple events and apply the same processing to all of them simultaneously.

▪ If you later create new events that refer to the same clip, these will have the same fades.

If other events refer to the same audio clip, you will be asked whether you want the processing to be applied to these events or not.

▪ Continue will apply the processing to all events that refer to the audio clip.

▪ New Version will create a separate, new version of the audio clip for the selected event.

- You can also activate the "Please, don't ask again" option. Regardless of whether you then choose "Continue" or "New Version", any further processing will conform to the option you select.

  You can change this setting at any time in the Preferences dialog (Editing–Audio page), under "On Processing Shared Clips".

The Fade dialogs

The Fade dialogs appear when you edit an existing fade or use the Fade In/Fade Out functions on the Process submenu of the Audio menu. The picture below shows the Fade In dialog; the Fade Out dialog has identical settings and features.
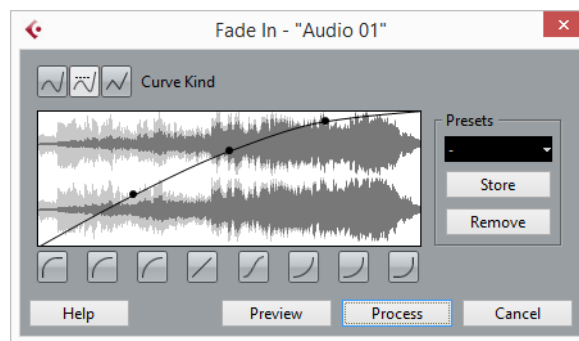
If you open the Fade dialog(s) with several events selected, you can adjust the fade curves for all these events at the same time. This is useful if you want to apply the same type of fade in to more than one event, etc.

The available options are:

Curve Kind

These buttons determine whether the fade curve consists of spline curve segments (left button), damped spline segments (middle button), or linear segments (right button).

Fade display

This shows the shape of the fade curve. The resulting waveform shape is shown in dark gray, with the current waveform shape in light gray.

Click on the curve to add points, and click and drag existing points to change the shape. To remove a point from the curve, drag it outside the display.

Curve shape buttons

These buttons give you quick access to some common curve shapes.

Restore button

This button is only available when editing fades made by dragging the fade handles. Click this to cancel any changes you have made since opening the dialog.

Fade Length Value

This parameter is only available when editing fades made by dragging the fade handles. It can be used to enter fade lengths numerically. The format of values displayed here is determined by the Time Display in the Transport panel.

- When you activate the Apply Length option, the value entered in the Fade Length value field is used when clicking Apply or OK.

- When you set the current fade as the default fade, the length value is included as part of the default settings.

Presets

In this section you can set up presets for fade in or fade out curves that you want to apply to other events or clips.

- To apply a stored preset, select it from the pop-up menu.

- To rename the selected preset, double-click on the name and type in a new one.

- To remove a stored preset, select it from the pop-up menu and click Remove.

As Default button

This button is only available when editing fades made by dragging the fade handles. Click this to save the current settings as the default fade, to be used whenever you create new fades by dragging event handles.

Applying a fade

Depending on whether you are editing a fade made with the fade handles or applying a fade using processing, different buttons are shown in the bottom row of the Fade dialog.

The Edit Fade dialogs have the following buttons:

OK

Applies the set fade curve to the event, and closes the dialog.

Cancel

Closes the dialog without applying any fade.

Apply

Applies the set fade curve to the event, without closing the dialog.

The Process Fade dialogs have the following buttons:

Preview

Plays back the fade area. Playback will repeat until you click the button again (the button is labeled "Stop" during playback).

Process

Applies the set fade curve to the clip, and closes the dialog.

Cancel

Closes the dialog without applying any fade.

Creating crossfades

Overlapping audio material on the same track can be crossfaded, for smooth transitions or special effects. You create a crossfade by selecting two consecutive audio events and selecting the Crossfade command on the Audio menu (or by using the corresponding key command, by default [X]).

The result depends on whether the two events overlap or not:

▪ If the events overlap, a crossfade is created in the overlapping area.

The crossfade will be of the default shape (linear, symmetric), but you can change this as described below.
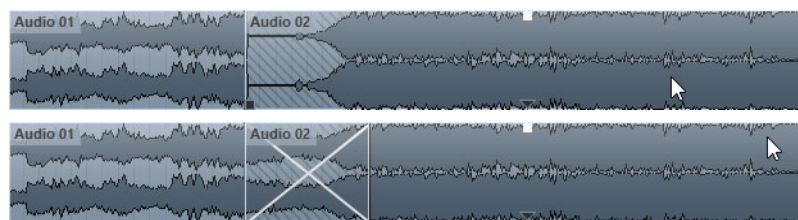
Crossfade area

NOTE

The default crossfade length and shape are set in the Crossfade dialog.

▪ If the events do not overlap but are directly consecutive (lined up end-to-start, with no gap) it is still possible to crossfade them – provided that their respective audio clips overlap! In this case, the two events are resized so that they overlap, and a crossfade of the default length and shape is applied.

▪ If the events do not overlap and cannot be resized enough to overlap, a crossfade cannot be created.

▪ You can specify the length of the crossfade using the Range Selection tool: make a selection range covering the desired crossfade area and use the Crossfade command on the Audio menu.

The crossfade is applied to the selected range (provided that the events or their clips overlap, as described above).

NOTE

You can also make a selection range after creating the crossfade and use the function "Adjust fades to Range" on the Audio menu.

- Once you have created a crossfade, you can edit it by selecting one or both crossfaded events, and selecting "Crossfade" from the Audio menu again (or by double-clicking in the crossfade zone).

  This opens the Crossfade dialog.

RELATED LINKS
The Crossfade dialog on page 180

Removing crossfades

To remove a crossfade, proceed as follows:

- Select the corresponding events and select "Remove Fades" from the Audio menu.

- Use the Range Selection tool to select all fades and crossfades you wish to remove, and select "Remove Fades" from the Audio menu.

- Select a crossfade by clicking, and drag it outside the track.

The Crossfade dialog
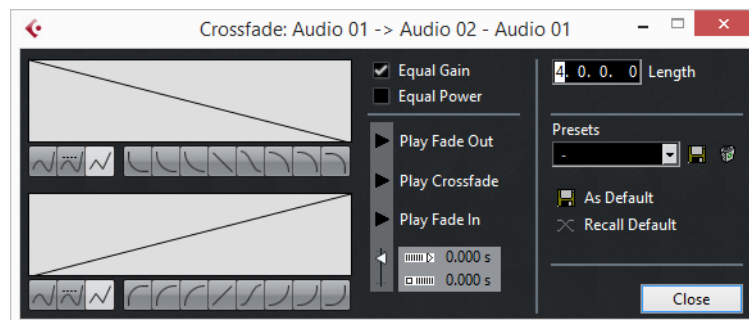
The Crossfade dialog contains separate, but identical, sections for the fade-in and fade-out curve settings in the crossfade on the left, and common settings on the right:

Fade curve displays

These displays show the shape of the fade out and fade in curve, respectively. Click on a curve to add points, click and drag existing points to change their shape, or drag a point outside the display to remove it.

Curve buttons

The curve kind buttons determine whether the corresponding fade curve consists of spline curve segments (left button), damped spline segments (middle button) or linear segments (right button).

The curve shape buttons give you quick access to some common curve shapes.

Equal Gain

Activate this parameter to adjust the fade curves so that the summed fade in and fade out amplitudes will be the same all along the crossfade region. This is often suitable for short crossfades.

Equal Power

Activate this parameter to adjust the fade curves so that the energy (power) of the crossfade will be constant all along the crossfade region.

Equal Power curves have only one editable curve point. You cannot use the Curve kind buttons or the presets when this mode is selected.

Play buttons

These buttons allow you to audition the whole crossfade, or the fade out part, or the fade in part. You can set up key commands for this in the following categories of the Key Commands dialog:

- Media category – Preview Start (triggers crossfade playback), Preview Stop (stops crossfade playback).

- Transport category – StartStop (triggers global playback), Stop (stops global playback) and StartStop Preview (triggers crossfade playback).

Pre-roll and Post-roll

Activate pre-roll to start playback before the fade area. Activate post-roll to stop playback after the fade area.

In the time fields you can enter the desired time (in seconds and milliseconds) for the pre-roll and post-roll length.

Length

This specifies the length of the crossfade area. Cubase tries to center the crossfade, i.e. the length change will be applied equally to both sides. To be able to resize a crossfade, it must be possible to resize the corresponding event. For example, if the fade out event already plays its audio clip to the end, its end point cannot be moved any further to the right.

Presets section

Click the Store button to the right of the Presets pop-up menu to store the settings of your crossfade so that you can apply them to other events later.

- To rename a preset, double-click on the name and type in a new one.

- To remove a preset, select it on the pop-up menu and click the Delete button.

Default buttons

Click the As Default button to store the current settings as default. These settings will then be used whenever you create new crossfades.

Click the Recall Default button to apply the curves and settings of the default crossfade to the Crossfade dialog.

RELATED LINKS
Key Commands on page 602

Auto fades and crossfades

Cubase features an Auto Fade function that can be set both globally, and separately for each audio track. The idea behind the Auto Fade function is to create smoother transitions between events by applying short (1 to 500 ms) fade ins and fade outs.

IMPORTANT

As event-based fades are calculated in realtime during playback, a higher number of audio events provokes to a higher the demand on the processor when Auto Fades is activated.

NOTE

Auto fades are not indicated by fade lines!

Making global Auto Fade settings

PROCEDURE

1. To make Auto Fades settings globally for a project, select "Auto Fades Settings…" from the Project menu.
    This opens the Auto Fades dialog for the project.
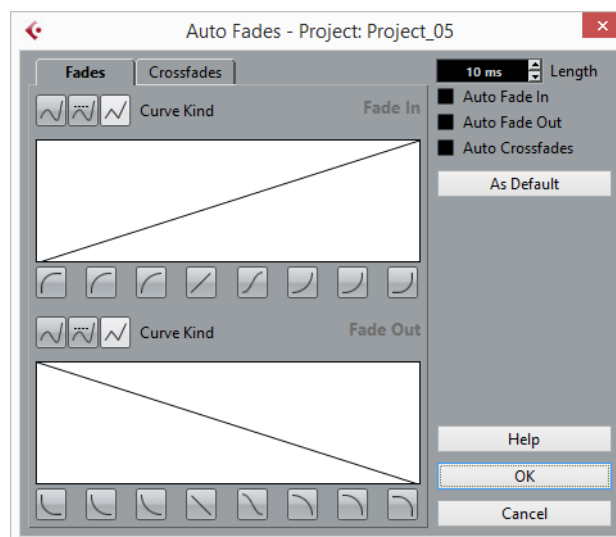
2. Use the Length value field to specify the length of the Auto Fades or Crossfades (1 to 500 ms).

3. Use the checkboxes in the upper right corner to activate or deactivate Auto Fade In, Auto Fade Out, and Auto Crossfades.

4. To adjust the shapes of Auto Fade In and Auto Fade Out, select the Fades tab and make settings as in the regular Fade dialogs.

5. To adjust the shape of the Auto Crossfade, select the "Crossfades" tab and make settings as in the regular Crossfade dialog.

6. If you want to use your settings in future projects, click the "As Default" button.

7. Click OK to close the dialog.

RELATED LINKS

Making Auto Fade settings for individual tracks

By default, all audio tracks will use the settings you have made in the project's Auto Fades dialog.

However, since Auto Fades use computing power, a better approach may be to turn Auto Fades off globally and activate them for individual tracks, as needed:

PROCEDURE

1. Right-click the track in the track list and select "Auto Fades Settings…" from the context menu (or select the track and click the "Auto Fades Settings" button in the Inspector).

   The Auto Fades dialog for the track opens. This is identical to the project's Auto Fades dialog, with the addition of a "Use Project Settings" option.

2. Deactivate the "Use Project Settings" option.

   Any settings you now make are applied to the track only.

3. Set up the Auto Fades as desired and close the dialog.

Reverting to project settings

If you want a track with individual Auto Fade settings to use the global Auto Fade settings, open the Auto Fades dialog for the track and activate the "Use Project Settings" checkbox.

Arranger Track (Cubase Elements only)

Introduction

The arranger track allows you to work with sections of your project in a non-linear fashion, to simplify arranging to the maximum extent. Instead of moving, copying and pasting events in the Project window to create a linear project, you can define how different sections are to be played back, like a playlist.

For this, you can define arranger events, order them in a list, and add repeats as desired. This offers a different and more pattern-oriented way of working, which complements the usual linear editing methods in the Project window.

You can create several arranger chains, making it possible to save different versions of a song within the project without sacrificing the original version. When you have created an arranger chain that you like, you have the option of "flattening" the list, which creates a normal linear project based on the arranger chain.

You can also use the arranger track for live performances on the stage, in clubs or at parties.

Setting up the arranger track

Let's say you have prepared a number of audio files that form the base of a typical pop song, with introduction, verse, chorus and bridge. Now you want to arrange these files.

The first step is to create an arranger track. On the arranger track, you define specific sections of the project by creating arranger events. These can be of any length, may overlap and are not bound to the start or end of existing events and parts. Proceed as follows:

PROCEDURE

1. Open the project for which you want to create arranger events.
2. Open the Project menu and select Arranger from the Add Track submenu (or right-click the track list and select the corresponding option from the context menu).

    An arranger track is added. There can be only one arranger track in a project, but you can set up more than one arranger chain for this track.

3. On the Project window toolbar, make sure that Snap is activated and that the Snap Type is set to a mode that allows your arranger events to snap to appropriate positions in the project.

    Snap to events is activated, i.e. when drawing in the Project window, new events will snap to existing events.

4. On the arranger track, use the Draw tool to draw an event of the desired length.

    An arranger event is added, called "A" by default. Any following events will be named in alphabetical order.

    You can rename an arranger event by selecting it and changing its name in the Project window info line or by holding down [Alt]/[Option], double-clicking on the name in the arranger chain (see below) and entering a new name.

    You may want to name your arranger events according to the structure of your project, e.g. Verse, Chorus, etc.

5. Create as many events as you need for your project.

    When arranger events have been created, the music sequence is determined by the arranger events.

    Events can be moved, resized and deleted using the standard techniques. Please note:

    ▪   If you want to change the length of an event, select the Object Selection tool and click and drag the lower corners of the event in the desired direction.

    ▪   If you copy an arranger event (by [Alt]/[Option]-dragging or by using copy/paste), a new event will be created with the same name as the original.

        However, this new event will be totally independent from the original event.

    ▪   Double-clicking on an arranger event adds it to the current arranger chain.

RELATED LINKS

Working with arranger events

You now have a number of arranger events that form the basic building blocks for your arrangement. The next step is to arrange these events using the functions of the Arranger Editor.

Creating an arranger chain

You can set up an arranger chain in the Arranger Editor or in the Inspector for the arranger track. The Arranger Editor is opened by clicking the "e" button in the Inspector or in the track list.

PROCEDURE

1.   Click the "e" button to open the Arranger Editor.
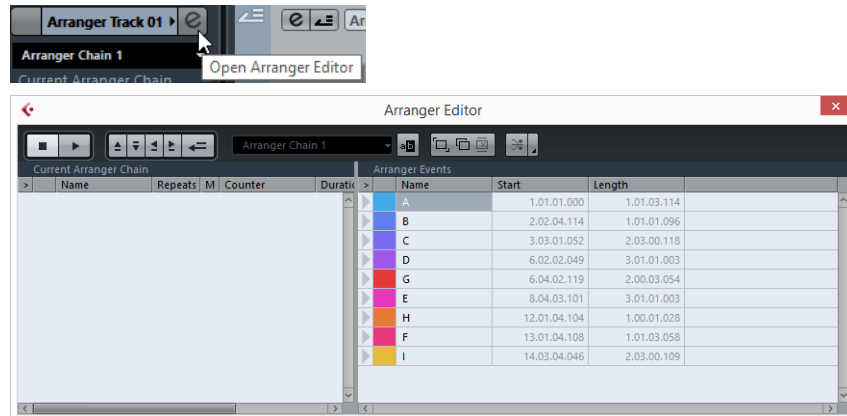
On the right in the Arranger Editor, the available arranger events are listed, in the order they appear on the timeline. To the left you find the actual arranger chain, which shows in which order the events will be played back, from top to bottom, and how many times they are repeated.

Initially the arranger chain is empty – you set it up by adding events from the list to the chain. There are several ways to add events to the arranger chain:

▪   By double-clicking on the name of an event in the window section on the right (or in the Project window).

    When an event is selected in the arranger chain on the left, this will add the event above the selected event. When no events are selected in the arranger chain, the event will be added at the end of the list.

▪   By selecting one or more events in the list, right-clicking and selecting "Append Selected In Arranger Chain".

    This will add the selected events at the end of the list.

▪   By dragging and dropping arranger events from the list on the right to the arranger chain on the left.

    A blue insertion line shows you where the dragged event will end up.
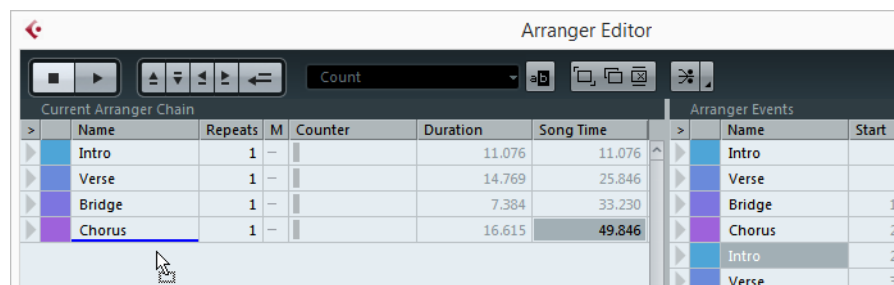
An event is dragged into the arranger chain.

▪   By dragging arranger events from the Project window into the arranger chain.

If you followed our example, you should now have arranger events arranged in a very basic pop song pattern. However, we have used audio files that are only a few bars

long – to turn our pattern into a "song" (or at least into a basic sketch of the song structure), these files must be looped. This is where the Repeats function comes in.

If you want an event to repeat several times, proceed as follows:

▪ Click in the Repeats field for an event, type in the desired number of repeats and press [Enter].

When playing back the arranger chain, the Counter column indicates which repeat of this event is currently playing.

▪ Click in the Mode field for an event and select the desired repeat mode.

When you now play back the arranger chain, you will hear the complete arrangement.

2. Make sure that Arranger mode is activated.

In Arranger mode the project will be played back using the arranger settings.
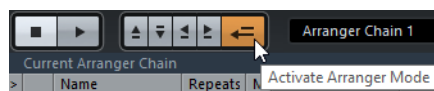
3. Position the Arranger Editor window so that you can see the arranger track in the Project window, and click in the arrow column for the event at the top of the list.

You will see the project cursor jump to the beginning of the first event specified in the arranger chain.

4. Activate playback, either from the Arranger Editor or on the Transport panel.

The events are played back in the specified order.

RELATED LINKS
Arranger Chain Repeat Modes on page 187

Arranger Chain Repeat Modes

Option	Button	Description
Normal	—	In this mode, the arranger chain will be played back as you set it up.
Repeat forever	⇌	In this mode, the current arranger event will be repeated in a loop until you either click on another event in the Arranger Editor or press play once again.
Pause after Repeats	‖	In this mode, the playback of the arranger chain will be stopped after having played back all repeats of the current arranger event.

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Editing the arranger chain

In the arranger chain on the left, you can do the following:

▪ Select multiple events by [Ctrl]/[Command]-clicking or [Shift]-clicking as usual.

▪ Drag events to move them in the list.

▪ Drag events holding [Alt]/[Option] to create copies of the selected items.

The insert location for both move and copy operations is indicated by a colored insertion line. A blue line indicates that the move or copy is possible; a red line indicates that moving or copying events to the current position is not allowed.

▪ Use the Repeats column to specify how many times each event is to be repeated.

▪ Click the arrow to the left of an event in the arranger chain to move the playback position to the start of that event.

▪ To remove an event from the list, right-click on it and select "Remove Touched" from the context menu. To remove several events, select them, right-click and select "Remove Selected".

Navigating

To navigate between arranger events, you use the arranger transport buttons.
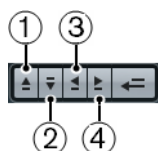
1) Previous chain step
2) Next chain step
3) First repeat of current chain step
4) Last repeat of current chain step

These controls are available in the Arranger Editor, on the Project window toolbar, and on the Transport panel.

In the Arranger Editor, the event that is currently played back is indicated by an arrow in the leftmost column, and the indicators in the Counter column.

Managing arranger chains

You can create several arranger chains. This way, you can create alternative versions for playback.

In the Arranger Editor, the toolbar buttons on the right are used for this:

Click this to rename the current arranger chain.

Creates a new, empty arranger chain.

Creates a duplicate of the current arranger chain, containing the same events.

Removes the currently selected arranger chain. Only available if you have created more than one arranger chain.

In the Inspector, these functions are accessed from the Arranger pop-up menu (opened by clicking on the Arranger name field).

The arranger chains you create will be listed on the Name pop-up menu, found in the Arranger Editor to the left of the buttons, at the top of the arranger track Inspector, and in the track list. Please note that to be able to select another arranger chain from the pop-up menu, the Arranger mode must be activated.

Flattening the arranger chain

When you have found an arranger chain that suits your purposes, you can "flatten" it, i.e. convert the list into a linear project.

PROCEDURE

1. Click the Flatten button (or select Flatten Chain from the pop-up menu in the Inspector for the arranger track).

   The events and parts in the project are reordered, repeated, resized, moved and/or deleted (if these are not within the boundaries of any used arranger event), so that they correspond exactly to the arranger chain.

   The Flatten button

2. Activate Playback.

The project will now play back exactly as in Arranger mode, but you can view it and work with it as usual.

> IMPORTANT
>
> Flattening the arranger chain may remove events and parts from the project. Only use the Flatten function when you know you do not want to edit the arranger track/chain any more. If in doubt, save a copy of the project before flattening the arranger chain.

Flattening options

Sometimes it might be useful to keep the original arranger events even after flattening the arranger track. By using flattening options you can define which chain is flattened, where it is stored and how it is named together with other options.

PROCEDURE

1. Click the Flattening options button.
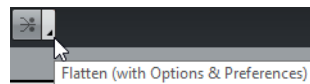
2. In the window that opens, select the desired options.
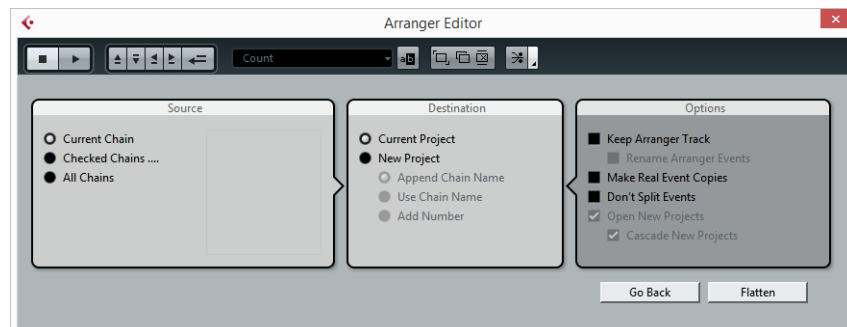
3. You can now flatten the arranger track by clicking the Flatten button.

If you realize that you want to do further arrangements, you can click the "Go Back" button and make your adjustments. Your Flattening settings will be kept.

4. Click the "Go Back" button to go back to the Arranger Editor or close the window by clicking its Close button.

Flattening options in the Arranger Editor dialog

In the Source section you can specify which arranger chains are flattened.

Current Chain

If you activate this option, only the current chain will be flattened.

Checked Chains…

If you activate this option, you can select the arranger chains you want to flatten in the list to the left.

All Chains

If you activate this option, all arranger chains of the current project will be flattened.

The Destination section allows you to choose where the result of the flattening is saved. The available options are:

Current Project

This is only available if you have selected "Current Chain" as Source. If you activate this option, the result of the flattening of the current chain will be saved in the current project.

New Project

If you activate this option, you can flatten one or several chains in a new project. In this case it might be useful to use naming options. If you activate "Append Chain Name", the Chain Names will be appended in brackets to the project name. If you activate "Use Chain Name", the new projects will have the name of the current arranger chains. If you activate "Add Number", the new projects will be named like the old ones and a number will be appended in brackets.

In the Options section you can make further settings. The available options are:

Keep Arranger Track

If you activate this option, the arranger track will be kept when flattening the arranger chain. Activate "Rename Arranger Events" to append a number to the events, according to their use. For example, if you use arranger event "A" two times, the first occurrence will be renamed "A 1" and the second "A 2".

Make Real Event Copies

Normally, you will get shared copies when flattening the arranger track. If you activate this option, real copies will be created instead.

Don't Split Events

If this option is activated, MIDI notes that start before or are longer than the arranger event will not be included. Only MIDI notes that begin and end inside the arranger event boundaries will be taken into account.

Open New Projects

If you activate this option, a new project will be created for every flattened arranger chain. If you activate the "Cascade New Projects" option the opened projects will be cascaded.

Live mode

If you have set up an arranger track and play it back, you have also the possibility to influence the playback order "live". Note that the Arranger mode has to be activated to be able to use the Live mode.

PROCEDURE

1.   Set up an arranger chain in the Inspector or in the Arranger Editor for an arranger track, activate the Arranger mode and play back your project.

Now you can use your arranger events listed in the lower section of the Inspector to play back your project in Live mode.

2.   Switch into Live mode by clicking on the little arrow in the lower list of the Inspector to the left of the arranger event you want to trigger.

The arranger event will be looped endlessly, until you click on another arranger event. This might be useful, for example, if you want to loop a guitar solo with a flexible length.

In the Jump Mode pop-up menu, you can define how long the active arranger event will be played, before jumping to the next one.

▪   You can stop Live mode by clicking the Stop button or go back to "normal" playback in Arranger mode by clicking on any arranger event in the upper list.

In the latter case, playback will be continued from the arranger event where you clicked.

RELATED LINKS

Jump Mode options

In the Jump Mode pop-up menu, you can define how long the active arranger event will be played, before jumping to the next one.
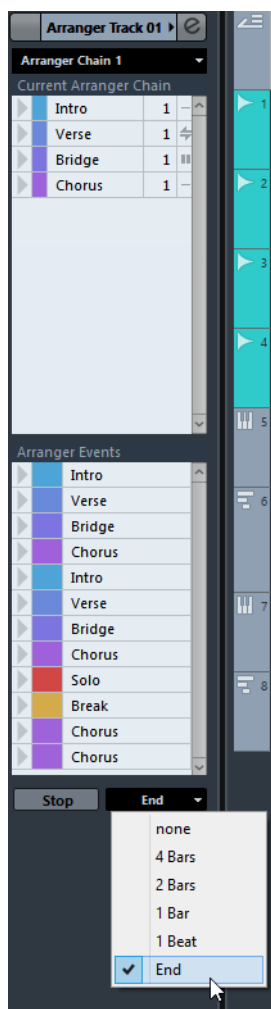
The following options are available:

None

Jumps to the next section immediately.

4 bars, 2 bars

When one of these modes is selected, a grid of 4 or 2 bars (depending on the setting) will be placed on the active arranger event. Whenever the respective grid line is reached, playback will jump to the next arranger event. An example:

Let's say you have an arranger event which is 8 bars long and the grid is set to 4 bars. When the cursor is anywhere within the first 4 bars of the arranger event when you hit the next arranger event, playback will jump to the next event when the end of the fourth bar of the arranger event is reached. When the cursor is anywhere within the last 4 bars of the arranger event, playback will jump to the next event at the end of the event.

When an event is shorter than 4 (or 2) bars and this mode is selected, playback will jump to the next section at the event end.

1 bar

Jumps to the next section at the next bar line.

1 beat

Jumps to the next section at the next beat.

End

Plays the current section to the end, then jumps to the next section.

You can stop Live mode by clicking the Stop button or go back to "normal" playback in Arranger mode by clicking on any arranger event in the upper list.

In the latter case, playback will be continued from the arranger event where you clicked.

Arranging your music to video

The relative time of your arranger track can be taken as a reference instead of the project time. This is useful, if you want to use the arranger track to compose music for video and fill a specific video section with music, by repeating the corresponding number of arranger events.

If you position your external sync master device to a position that does not match the Project Start time, Cubase will jump automatically to the right position in the arranger track and will start playback from there, i.e. the correct relative position and not the absolute project time will be found. The reference for the external timecode can be MIDI or any other timecode that can be interpreted/read by Cubase.

An example:

PROCEDURE

1. Set up a project with a MIDI track and three MIDI parts. The first part should start at position 00:00:00:00 and end at position 00:01:00:00, the second should start at position 00:01:00:00 and end at position 00:02:00:00 and the third should start at position 00:02:00:00 and end at position 00:03:00:00.

2. Activate the Sync button on the Transport panel.

3. Add an arranger track and create arranger events that match the MIDI parts.

4. Set up the arranger chain "A-A-B-B-C-C", activate the Arranger mode and play back your project.

5. Start external timecode at position 00:00:10:00 (within the range of "A").

    In your project, the position 00:00:10:00 will be located and you will hear "A" playing. Nothing special!

    Now, let's see what happens if your external sync master device starts at a position that does not match the Project Start time:

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6.   Start at 00:01:10:00 (within the range of what originally was "B").

In your project, the position 00:01:10:00 will be located and you will hear "A" playing, because it plays twice in the arranger track.

7.   Start external timecode at position 00:02:10:00 (within the range of what originally was "C").

In your project, the position 00:02:10:00 will be located and you will hear "B" playing, because it plays "later" in the arranger track.

NOTE

If the Arranger mode is not activated or no arranger track exists, Cubase will work as usual.

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.

Position Markers

Position markers allow you to save a specific position.

Position markers on the marker track are shown as marker events: vertical lines with the marker description (if assigned) and number beside it. If you select a marker track, all its markers are shown in the Inspector.

Cycle Markers

By creating cycle markers you can save any number of left and right locator positions as start and end positions of a range and recall them by double-clicking on the corresponding marker.

Cycle markers are shown on marker tracks as two markers bridged by a horizontal line. Cycle markers are ideal for storing sections of a project.

By defining cycle markers for sections of a song, e.g. "Intro", "Verse", and "Chorus", you can quickly navigate to the song sections and repeat the section by activating the Cycle button on the Transport panel.

Setting the Locators Using Cycle Markers

Cycle markers represent ranges in your project. You can use them for moving the left and right locators.

PROCEDURE

- To set the left locator to the cycle marker start and the right locator to the cycle marker end, perform one of the following actions:
  - Double-click on a cycle marker.
  - From the Cycle pop-up menu in the track list, select a cycle marker.

RESULT

The left and right locators are moved to encompass the cycle marker.

AFTER COMPLETING THIS TASK

Now you can move the project cursor position to the start or the end of the cycle marker by moving it to the corresponding locator or use cycle markers to export specific ranges of your project with the **Export Audio Mixdown** dialog.

Editing Cycle Markers

When editing cycle markers on the marker track, snap is taken into account.

- To add a cycle marker, press [Ctrl]/[Command] click and drag on the marker track.

- To change the start/end position of a cycle marker, drag the start/end handle.

- To move a cycle marker to another position, drag the upper border.

- To delete a cycle marker, click with the **Erase** tool.
  If you hold down [Alt]/[Option] when you click, all consecutive markers are deleted.

- To trim a cycle marker, select a range in the cycle marker and press [Ctrl]/[Command]-[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 create a selection range spanning all tracks in the project, double-click a cycle marker.

- To set the left and right locators, double-click a cycle marker.

- To zoom in on a cycle marker, press [Alt]/[Option] and double-click the cycle marker.

Markers Window

In the **Markers** window you can view and edit markers. The markers on the marker track are displayed in the marker list in the order in which they occur in the project.

To open the **Markers** window, you have the following possibilities:

- Select **Project > Markers**.

- On the **Transport** panel in the marker section, click **Show**.

- Use a key command (by default [Ctrl]/[Command]-[M]).
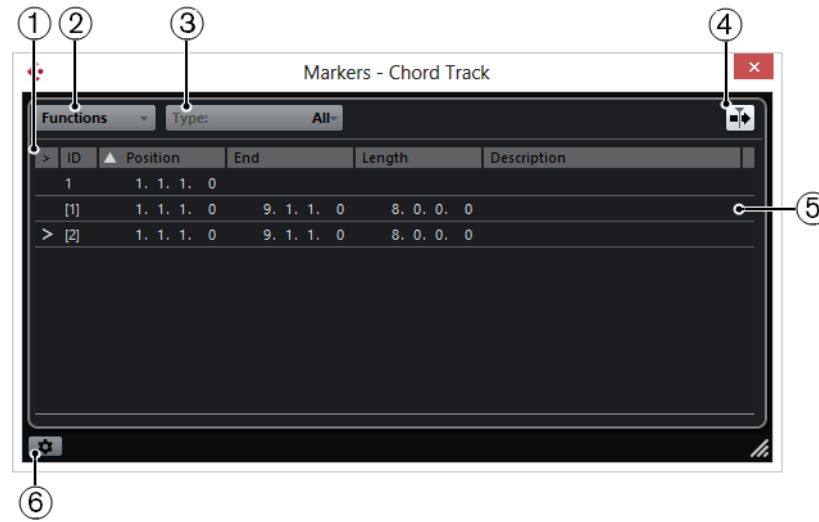
1) **Locate arrow**

    Indicates which marker is at the project cursor position.

2) **Functions menu**

    Lists all functions available in the **Marker** window.

3) **Marker type**

    Allows you to specify which marker type is shown in the marker list.

4) **Auto-Scroll with Project Cursor**

    Allows you to keep track of the locate arrow, even if your project contains a large number of markers. When this option is activated, the **Marker** window is automatically scrolled to keep the locate arrow visible.

5) **Markers list**

    Shows the markers in the order in which they occur in the project.

6) **Marker Preferences**

    Shows the marker preferences.

Editing in the Markers Window

In the **Markers** window you can select, edit, add, move, and remove markers.

- To select a marker, click on it.

- To edit a selected marker, click on it.
  Select multiple markers by [Shift] or [Ctrl]/[Command]-clicking them.

- To add a position marker at the cursor position, select **Functions > Insert 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, select **Functions > Insert Cycle Marker**.
  This adds a cycle marker between the left and right locators on the marker track.

- To move a marker to the cursor position, select the marker and select **Functions > Move Markers to Cursor**.
  You can also enter the new position numerically in the **Position** column. If a cycle marker is selected, the move operation affects the cycle marker start position.

- To remove a marker, select it and select **Functions > Remove Marker**.

Navigating in the Marker List

You can navigate in the marker list using your computer keyboard and select entries by pressing [Enter]. This is a quick and easy way to jump to markers during playback or recording.

- To move to the previous/next marker in the list, press [Up Arrow]/[Down Arrow].

- To jump to the first/last marker, press [Page Up]/[Page Down].

Sorting and Reordering the Marker List

You can customize the display of the marker attributes in the marker list by sorting or reordering the columns.

- To sort the marker list by a specific attribute, click on the corresponding column header.

- To reorder the marker attributes, drag and drop the corresponding column headers.

- To adjust the width of a column, place the mouse pointer between two column headers and drag left or right.

NOTE

No matter by which attribute you sort, the second sort criterion will always be the position attribute.

Marker Preferences

You can access the marker preferences by clicking the corresponding button in the bottom left corner of the **Markers** window.
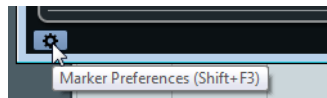
Cycle follows when locating to Markers

This sets the left and right locators automatically to a position or cycle marker, when locating to this marker. This is useful if you need to set the locators on the fly, e.g. during recording for Punch In/Punch Out.

Show marker IDs on marker track

When this option is activated, the marker IDs are shown on the marker track.

Sync Selection

When this option is activated, the **Markers** window selection is linked to the selection in the **Project** window.

Marker Attributes

The following marker attributes are shown in the marker list of the **Marker** window:

Locate

An arrow indicates which marker is at the project cursor position (or closest to the project cursor). If you click in this column, the project cursor is moved to the corresponding marker position. This column cannot be hidden.

ID

This column shows the marker ID numbers.

Position

In this column you can view and edit the markers' time positions (or start positions for cycle markers). This column cannot be hidden.

End

In this column you can view and edit the end positions of cycle markers.

Length

In this column you can view and edit the length of cycle markers.

Description

Here you can enter names or descriptions for markers.

RELATED LINKS

Editing Attributes

- To edit a marker attribute, select the corresponding marker, click in the desired attribute column, and make your settings.

- To change the attributes of several markers, select the markers and click the checkbox for the desired attribute.

  All selected markers will change their attributes accordingly. Note that this does not work when clicking on a timecode value or a text field.

NOTE

To navigate in the list of marker attributes, you can also use the [Tab] key and the arrow keys.

Sorting and Reordering Columns

You can customize the display of the marker attributes in the marker list by sorting or reordering the columns.

- To sort the marker list by a specific attribute, click on the corresponding column header.

  NOTE

  No matter by which attribute you sort, the second sort criterion will always be the position attribute.

- To reorder the marker attributes, drag and drop the corresponding column headers.

- To adjust the width of a column, place the mouse pointer between two column headers and drag left or right.

Marker IDs

Each time you add a marker, it is automatically and sequentially assigned an ID number, starting from 1.

IDs for cycle markers are shown in brackets and start from [1]. ID numbers can be changed at any time – this allows you to assign specific markers to key commands.

NOTE

If you move a marker from one marker track to another by drag & drop in the **Project** window and the marker ID is already used on this track, the inserted marker automatically gets a new ID.

Reassigning Marker IDs

Sometimes, especially when setting markers on the fly, you may forget or miss to set a marker. When added later, this marker's ID will not correspond to its position on the marker track. Therefore, it is possible to reassign the IDs for all markers on a track.

PROCEDURE

1.   Open the **Markers** window.
2.   Open the **Functions** pop-up menu and select either **Reassign Position Marker IDs** or **Reassign Cycle Marker IDs**.

RESULT

The marker IDs of the selected type are reassigned to match the order of markers on the marker track.

Marker Track

The marker track is used for adding and editing markers.

1)   **Add Marker**
      Adds a position marker at the cursor position.

2)   **Add Cycle Marker**
      Adds a cycle marker at the cursor position.

3) **Locate pop-up menu**

If you select a position or a cycle marker in this pop-up menu, the corresponding marker in the event display or in the **Markers** window is selected.

4) **Cycle pop-up menu**

If you select a cycle marker in this pop-up menu, the left and right locators are set to the corresponding cycle marker.

5) **Zoom pop-up menu**

If you select a cycle marker in this pop-up menu, the view zooms to the corresponding cycle marker.

6) **Marker event (inactive)**

Shows an inactive marker event.

7) **Marker event (active)**

Shows an active marker event.

8) **Cycle marker event (inactive)**

Shows an inactive cycle marker event.

9) **Cycle marker event (active)**

Shows an active cycle marker event.

Adding, Moving, and Removing the Marker Track

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

- To move the 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.

Editing Markers on the Marker Track

- To add a position marker, click **Add Marker** [icon] or use the **Draw** tool.

- To add a cycle marker, click **Add Cycle Marker** [icon] or use the **Draw** tool.

- To select a marker, use the standard techniques.

- To resize a cycle marker, select it and drag the handles. You can also do this numerically on the info line.

- To move a marker, select it and drag it. You can also edit marker positions on the info line.

- To remove a marker, select it and press [Delete] or use the **Erase** tool.

Using Markers to Select Ranges

Markers can be used in conjunction with the **Range Selection** tool to make range selections in the **Project** window. This is useful if you quickly want to make a selection that spans all tracks in the project.

PROCEDURE

1. Set markers at the start and end of the section that you want to move or copy.

2. Select the **Range Selection** tool and double-click on the marker track between the markers.

   Everything in the project within the marker boundaries is selected. Any functions or processing you perform now affect the selection only.

3. Click on the marker track in the selected range and drag the range to a new position.

   If you hold down [Alt]/[Option] 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

Importing Markers via MIDI

You can import position markers by importing MIDI files containing markers. This is useful if you want to use your marker tracks in other projects or if you want to share them with other Cubase users. Any markers you have added are included in the MIDI file as standard MIDI file marker events.

- Select **File > Preferences > MIDI > MIDI File** and make sure **Import Markers** is activated.

The following settings are imported:

- The start position of position markers and cycle markers

RELATED LINKS
Importing MIDI files on page 624

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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 be able to export markers via MIDI export, your project must contain a marker track.

RELATED LINKS
Exporting MIDI files on page 622

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, it is a convenient environment for setting up the input and output routing for multiple tracks or channels at the same time.

To open the **MixConsole**, you have the following options:

- Press [F3].

- Select **Devices > MixConsole**.

- On the **Project** window toolbar, click **Open MixConsole** ⥮.

  This is only visible on the toolbar if the section **Media & MixConsole Windows** is activated.
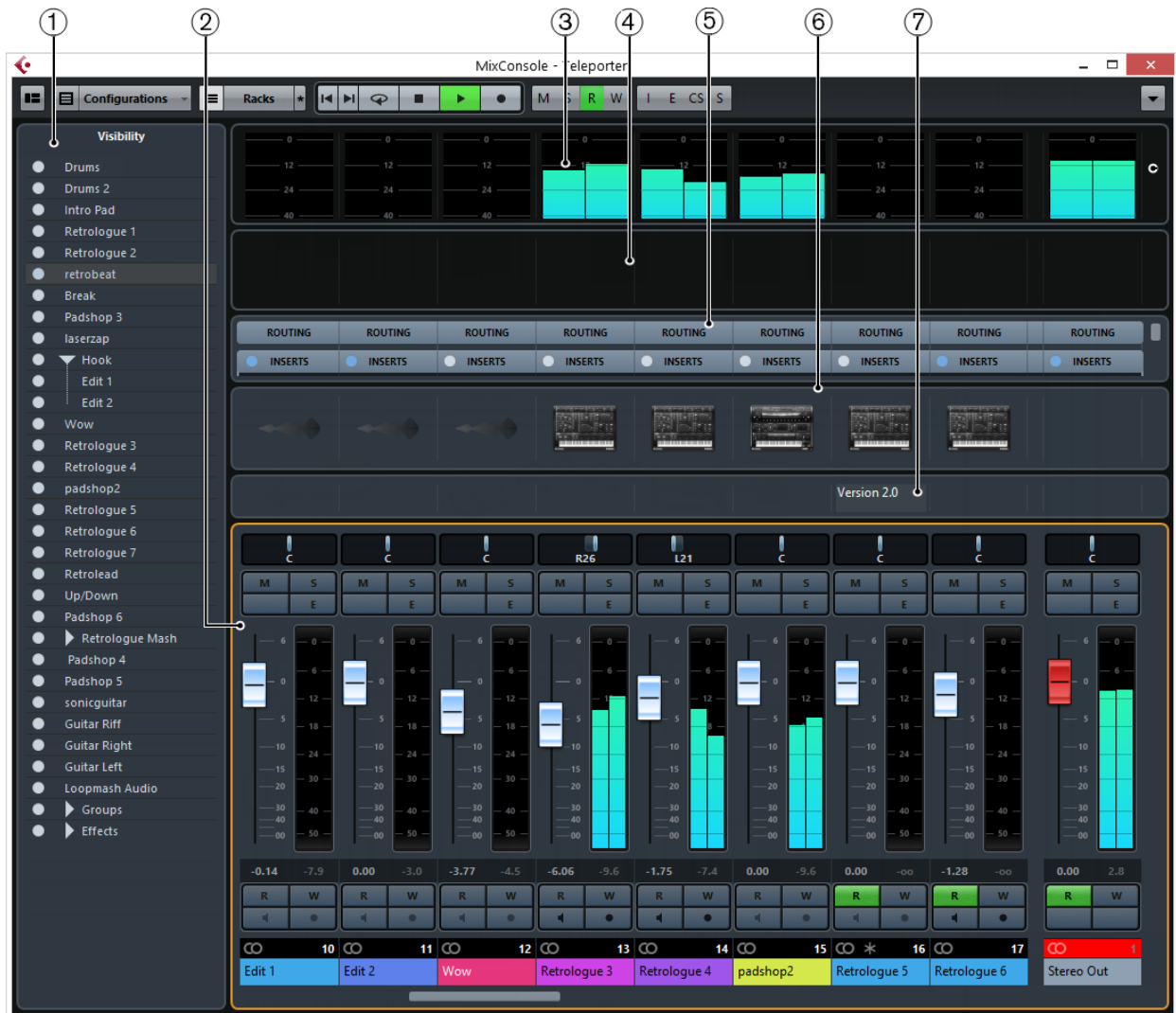
The **MixConsole** is divided into several sections:

1) **Channel Selector**

    Allows you to set up the visibility of channels in the fader section.

2) **Fader Section**

    The fader section is the heart of the **MixConsole**. It is always visible and shows all channels in the same order as in the track list.

3) **Meter Bridge**

    Allows you to monitor the levels of your channels.

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 Racks**

    Allows you to show additional channel controls as needed.

6) **Pictures**

Opens the **Pictures** section that allows you to add a picture to the selected channel. Pictures can help you identify your **MixConsole** channels quickly.

7) **Notepad**

In the **Notepad** section, you can enter notes and comments about a channel. Each channel has its own notepad.

RELATED LINKS
Track Pictures Browser on page 94

Setting Up the MixConsole

You can show and hide the different sections of the **MixConsole**. This saves screen space and enables you to display only the information that you need.

PROCEDURE

1. Click the **Set up Window Layout** button on the **MixConsole** toolbar.
2. Activate the checkboxes for the sections that you want to show.
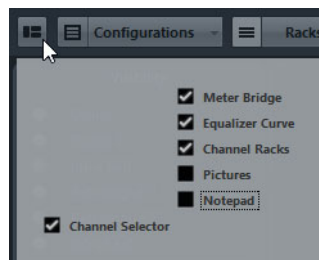
MixConsole Toolbar

The toolbar holds tools and shortcuts for settings and functions in the **MixConsole**.

Set up Window Layout

Allows you to activate/deactivate the different sections of the **MixConsole**.

Filter Channel Types

Opens the channel filter that allows you to show/hide all channels of a certain channel type.

Channel Visibility Configurations

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

Show Channel Racks

Activates/Deactivates the rack selector.

Select Racks

Opens the rack selector that allows you to show/hide specific racks.

Rack Settings

Opens a pop-up menu with settings for the racks.

Locators

Shows the left and right locator positions.

Transport Buttons

Shows the transport controls.

Time Display

Shows the time display.

Markers

Shows the marker buttons.

State Buttons

Shows the mute, solo, listen, and automation states. Here you can also bypass inserts, EQs, channel strips, and sends.

Link Group

Allows you to link channels.

Zoom Palette

Allows you to increase/reduce the channel width and the rack height. You can change the width for all channels from viewable (narrow) to editable (wide), by using the default key commands [G] and [H].

Performance Meter

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

Functions Menu

Opens the **Functions Menu**, that allows you to make settings in the **MixConsole**.

Configuring the MixConsole

You can configure the **MixConsole** exactly to your needs and to your individual workflow.

Channel Selector

The channel selector contains the **Visibility** tab that lists all channels contained in your project.

Visibility Tab

The **Visibility** tab allows you to determine which channels are shown in the **MixConsole**. This is particularly helpful if you organize your tracks in folder or group tracks.
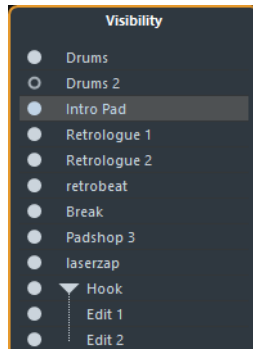
- To show/hide channels, activate/deactivate the dots.

- To collapse/expand groups and folders, click the group or folder name.

Input Routing Configurations for Mono Channels

- Mono input busses.

- Mono output busses, or mono group output busses.
  These should not lead to feedback.

RELATED LINKS
[Routing on page 221](#)

Input Routing Configurations for Stereo Channels

- Mono or stereo input busses.

- Mono or stereo output busses, and mono or stereo group output busses.
  These should not lead to feedback.

RELATED LINKS
[Routing on page 221](#)

Filtering Channel Types

The channel types filter on the **MixConsole** toolbar allows you to determine which channel types are shown.

PROCEDURE

1. Click **Filter Channel Types**.

    This opens the channel types filter.
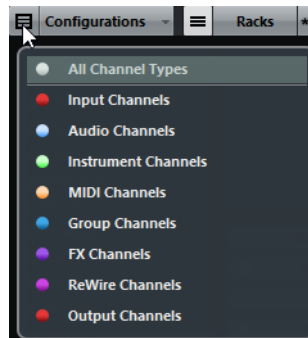
2. Click a dot to the left of a channel type to hide it.

RESULT

Channels of the filtered type are removed from the fader section and the color of the **Filter Channel Types** button changes to indicate that a channel type is hidden.

Rack Selector

The rack selector allows you to activate specific **MixConsole** functions, such as routing, insert, or send handling, that are organized in racks.

*   To activate the rack selector, activate **Show Channel Racks**.
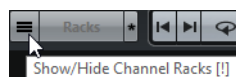
Channel Racks

You can activate and deactivate the different channel racks in the **MixConsole**.

*   To open the **Select Racks** pop-up menu, click **Select Racks**.
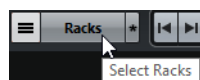
Depending on the channel type, you can activate/deactivate the following racks:

Routing

Allows you to set up the input and output routing. For MIDI, you can also select the MIDI channel.

Pre (Filters/Gain) (Cubase Elements only)

Contains input filter and gain controls along with **Phase** and **Gain** controls for audio-related channels or an **Input Transformer** control for MIDI channels.

Inserts

Allows you to select insert effects for your channel.

Equalizers (audio-related channels only)

Allows you to set the channel EQ.

Channel Strip (audio-related channels only)

Allows you to integrate channel strip modules, such as Gate, Compressor, EQ, Transformer, Saturator, and Limiter that allow you to enhance your sound.

Sends

Allows you to select send effects for your channel.

Rack Settings

The **Rack Settings** pop-up menu allows you to make settings for the racks.

- To open the **Rack Settings** pop-up menu, click *****.

Exclusive Expanded Rack

Shows the selected rack exclusively and collapses the other racks.

Fixed Number of Slots

Shows all available slots for the **Inserts**, **Sends**, **Cues**, and **Quick Controls** racks.

Link Racks to Configurations

If activated, the rack status is taken into account when you save and load a configuration.

Show Pre/Filters as <Combined Label & Setting> (Cubase Elements only)

Select **Combined Label & Setting**, if you want to show the label and the setting in one line.

Select **Separate Label & Setting**, if you want to show the label and the setting in separate lines.

Show Inserts as <Plug-in & Preset Names>

Select **Plug-in Names**, if you want to show the plug-in names only.

Select **Plug-in & Preset Names**, if you want to show the plug-in and the preset names.

Show All Channel Strip Controls

Shows all available controls on the **Channel Strip** rack.

Show One Channel Strip Type

Shows only one channel strip type at a time.

Show Sends as <Combined Destination & Gain>

Select **Combined Destination & Gain**, if you want to show the destination and the gain in one line.

Select **Separate Destination & Gain**, if you want to show the destination and the gain in separate lines.

Channel Visibility Configurations

The **Channel Visibility Configurations** button on the **MixConsole** toolbar allows you to create configurations that are useful for switching quickly between different visibility setups.

The button displays the name of the active configuration. A list of configurations is shown as soon as you create at least one configuration. To load a configuration, select it from this list. Channel visibility configurations are saved with the project.

Add Configuration

Opens the **Add Configuration** dialog that allows you to save the configuration and enter a name for it.

Update Configuration

If you change the active configuration, this is indicated by an asterisk after the configuration name. Use this function to save changes to the active configuration.

Rename Configuration

Opens the **Rename Configuration** dialog that allows you to rename the active configuration.

Delete Configuration

Allows you to delete the active configuration.

Move Configuration to Position

This function becomes available if 2 or more configurations exist. It allows you to change the position of the active configuration on the menu. This is useful as you can assign key commands to the first 8 configurations in the **Channel & Track Visibility** category of the **Key Commands** dialog.

Saving Configurations

To quickly switch between different channel setups, you can save configurations. The configurations contain visibility settings as well as the show/hide status of channel types and racks.

PROCEDURE

1. Set up the configuration that you want to save.
2. On the toolbar, click **Configurations**.
3. From the pop-up menu, select **Add Configuration**.
4. In the **Add Configuration** dialog, enter a name for the configuration.
5. Click **OK**.

RESULT

The configuration is saved and you can return to it at any time.

Linking Channels

You can link selected channels temporarily. Any change that is applied to one channel is mirrored by all linked channels.

Using Quick Link

You can activate the **Temporary Link Mode** to synchronize all touched parameters of selected channels.

PROCEDURE

1. Select the channels that you want to link.
2. On the **MixConsole** toolbar, activate **Q-Link**.

    NOTE

    You can also press [Shift]-[Alt]/[Option] 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**.

Input Levels

When recording digital sound, it is important to set the input levels high enough to ensure low noise and high audio quality. At the same time, you must avoid clipping (digital distortion).

Setting Input Levels

PROCEDURE

1. Click **Filter Channel Types** and activate **Input Channels**.

    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. Select **Functions > Global Meter Settings > Meter Position** and activate **Input**.

3. 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.

4. If necessary, adjust the input level in one of the following ways:
    *   Adjust the output level of the sound source or the external mixer.
    *   If possible, use the audio hardware's own application program to set the input levels. See the documentation for the audio hardware.
    *   If your audio hardware supports the ASIO control panel function, it may be possible to make input level settings. To open the ASIO control panel, select **Devices > Device Setup** and in the list to the left (below **VST Audio System**), select your audio card. When this is selected, you can open the control panel by clicking the **Control Panel** button in the settings section to the right.

5. Optional: Select **Functions > Global Meter Settings > Meter Position** and activate **Post-Fader**.

    NOTE

    This allows you to check the level of the audio being written to a file on your hard disk which is only necessary if you make any adjustments to the input channel.

6. In the **Channel Racks** section, in the **Inserts** rack, click a slot and select an effect, or in the **Equalizers** rack, make your EQ settings.

    For some effects you may want to adjust the level of the signal going into the effect. Use the input gain function for this. Press [Shift] or [Alt]/[Option] to adjust the input gain.

7. 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.

8. If necessary, use the input channel fader to adjust the signal level.

Clipping

Clipping typically occurs in the audio hardware when an analog signal is too loud and therefore converted to digital in the hardware's A/D converters.

Copying and Moving Rack and Channel Settings

You can use drag and drop to copy or move rack and channel settings.

Drag and drop works between different channels or different rack slots on the same channel. When you drag, a blue frame indicates the sections where you can drop your settings.

The following applies:

▪ To copy the rack settings from one rack to another, drag the rack and drop it on the rack to which you want to copy the settings.

▪ To move the rack settings from one rack to another, press [Alt]/[Option], drag the rack, and drop it on the rack to which you want to move the settings.

▪ To copy the channel settings from one channel to another, drag the channel and drop it on the channel to which you want to copy the settings.

You can copy rack and channel settings between different types of channels, provided that the target channels have corresponding settings.

▪ For example, copying from input/output channels leaves the sends settings in the target channel unaffected.

Fader Section

The fader section is the heart of the **MixConsole**. It shows input and output channels together with audio, instrument, MIDI, group, FX, and ReWire (not in Cubase LE) channels that appear in the same order as in the track list.

NOTE

If a channel is deactivated in the channel selector or if its channel type is deactivated, it is not shown in the fader section.

The fader section allows you to do the following:

- Set the panorama

- Activate mute and solo

- Open the channel settings

- Set the volume

- Enable automation

RELATED LINKS

Setting Pan

For each audio-related channel with at least a stereo output configuration, you can find a pan control at the top of the fader section. For MIDI channels, the pan control sends out MIDI pan messages. The result depends on how your MIDI instrument is set to respond to pan.

The pan control allows you to position a channel in the stereo spectrum.

- To make fine adjustments, hold down [Shift] when you move the pan control.

- To select the default center pan position, hold down [Ctrl]/[Command], and click the pan control.

- To edit the value numerically, double-click the pan control.

RELATED LINKS

Stereo Balance Panner

The stereo balance panner allows you to control the balance between the left and right channels. It is activated by default.
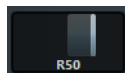
Panning Bypass

You can bypass the panning for all audio-related channels.

- To activate panning bypass, click the button to the left or press [Ctrl]/[Command]-[Alt]/[Option]-[Shift] and click the pan control.

- To deactivate panning bypass, press [Ctrl]/[Command]-[Alt]/[Option]-[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 the **Solo** and **Mute** buttons.

- To silence a channel, click **Mute**.

  Click again to deactivate the mute state for the channel.

- To mute all other channels, click **Solo** for a channel.

  Click again to deactivate the solo state.

- To deactivate the mute or solo states for all channels simultaneously, click **Deactivate All Mute States** or **Deactivate All Solo States**.

- To activate exclusive solo mode, hold down [Ctrl]/[Command] and click **Solo** for the channel.

  The **Solo** buttons of all other channels are deactivated.

- To activate solo defeat for a channel, [Alt]/[Option]-click **Solo**.

  You can also click and hold **Solo** to activate solo defeat. In this mode the channel is not muted when you solo another channel. [Alt]/[Option]-click again to deactivate solo defeat.

Setting Volume

Each channel in the fader section of the **MixConsole** has a volume fader. The fader levels are displayed below the fader, in dB for audio-related channels and as MIDI volume (0 to 127) for MIDI channels.

- To change the volume, move the fader up or down.

- To make fine volume adjustments, press [Shift] while moving the faders.

- To reset the volume on its default value, press [Ctrl]/[Command] 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.

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.

Channel Meter Options

You can change the meter characteristics for audio channels using the context menu of the channel meter.

Meter Peak Options - Hold Peaks

The highest registered levels are held and shown as static horizontal lines in the meter.

Meter Peak Options - Hold Forever

If this option is activated, the peak levels are shown until you reset the meters. If this option is deactivated, you can use the **Meters' Peak Hold Time** parameter (**File > Preferences > Metering**) to specify for how long the peak levels are held. The peak hold time can be between 500 and 30000 ms.

Meter Position - Input

If this option is activated, the meters show input levels for all audio channels and input/output channels. The input meters are post input gain.

Meter Position - Post-Fader

If this option is activated, the meters show post-fader levels.

Meter Position - Post-Panner

If this option is activated, the meters show post-fader levels and also reflect pan settings.

Reset Meters

Resets the meters.

Working with Channel Racks

The **Channel Racks** section holds specific **MixConsole** functions, such as routing, insert, or send handling. These are organized in racks.

Routing

The **Routing** rack allows you to configure input and output routing, that is, setting up input and output busses.

Input busses are used when you record on an audio track. In this case, you must select from which input bus the audio is received.

The settings that you make for the input channel will be a permanent part of the recorded audio file.

Output busses are used when you play back an audio, group, or FX channel. In this case, you must route the channel to an output bus.

You can route the outputs from multiple audio channels to a group. For example, to control the channel levels using one fader, and to apply the same effects and equalization to all the channels.

Setting up Routing

PREREQUISITE

Set up busses and group channels in the **VST Connections** window.

PROCEDURE

1. On the **MixConsole** toolbar, activate **Show Channel Racks**.
2. Click **Racks** and activate **Routing** to show the **Routing** rack above the fader section.
3. Click one of the slots of the **Routing** rack to open the input or the output routing pop-up menu for a channel.
4. In the routing selector, select an entry.
   - To set up the routing for multiple selected channels simultaneously, press [Shift]-[Alt]/[Option] and select a bus.
   - To set several selected channels to incrementing busses (the second selected channel to the second bus, the third to the third bus, etc.), press [Shift] and select a bus.
   - To disconnect input or output bus assignments, select **No Bus**.

Input Busses

The input routing selector only lists busses that correspond to the channel configuration.

NOTE

If you select a group channel as input for an audio channel, you can record a downmix.

Output Busses

For output busses any assignment is possible.

Using Group Channels

You can route the outputs from multiple audio channels to a group. This enables you to control the channel levels using one fader, apply the same effects and EQ to all channels, etc. You can also select a group channel as input for an audio track, to record a downmix of separate tracks, for example.

PREREQUISITE

You have created and set up a group channel track in stereo.

PROCEDURE

1. Route the group channel track to an output bus.
2. Add effects to the group channel as insert effects.
3. Route the mono audio track to the group channel.

RESULT

The signal from the mono audio track is sent directly to the group, where it passes through the insert effect, in stereo.

Pre (Filters/Gain/Phase) (Cubase Elements only)

The **Pre** rack for audio-related channels features a high-cut and a low-cut filter as well as gain and phase settings.

For MIDI channels it allows you to open the Input Transformer.

NOTE

You cannot edit the **Pre** rack settings in the EQ curve display.

RELATED LINKS
Equalizer Settings on page 226

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, activate **Show Channel Racks**.

2. Click **Racks** and activate **Pre (Filters/Gain/Phase)** to show the **Pre** rack above the fader section.

3. Click to the left of the high-cut filter to activate the high-cut filter. You have the following options:
   - Drag the slider to adjust the cutoff frequency.

     The available range spans from 20 kHz to 50 Hz.
   - Click **Select Filter Slope** on the right of the high-cut filter to select a filter slope.

     You can choose between 6, 12, 24, 36, and 48 dB. The default value is 12 dB.

4. Click to the left of the low-cut filter to activate the low-cut filter. You have the following options:
   - Drag the slider to adjust the cutoff frequency.

     The available range spans from 20 Hz to 20 kHz.
   - Click **Select Filter Slope** on the right of the low-cut filter to select a filter slope.

     You can choose between 6, 12, 24, 36, and 48 dB. The default value is 12 dB.

RESULT

The changed settings are visible in the curve display. If you deactivate the high-cut and low-cut filters, the filter curves are removed from the display. Bypassed high-cut and low-cut filters are displayed in a different color.

Making Input Gain Settings

The **Pre-Gain** slider allows you to change the level of a signal before it reaches the EQ and the effects section. This is useful as the level going into certain effects can change the way the signal is affected. A compressor, for example, can be driven harder by raising the input gain. Gain can also be used to boost the level of poorly recorded signals.

PROCEDURE

1. On the **MixConsole** toolbar, activate **Show Channel Racks**.

2. Click **Racks** and activate **Pre (Filters/Gain/Phase)** to show the **Pre** rack above the fader section.

3. 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, activate **Show Channel Racks**.

2. Click **Racks** and activate **Pre (Filters/Gain/Phase)** to show the **Pre** rack above the fader section.

3. Activate **Phase** to invert the phase polarity for the signal.

Inserts

The Inserts rack for audio-related channels features insert effect slots that allow you to load insert effects for a channel. For MIDI channels you can load MIDI inserts.

For further information, refer to the separate PDF document Plug-in Reference.

RELATED LINKS
Audio Effects on page 240

Adding Insert Effects

PROCEDURE

1. On the **MixConsole** toolbar, activate **Show Channel Racks**.

2. Click **Racks** and activate **Inserts** to show the Inserts rack above the fader section.

3. Click one of the insert slots to open the insert selector.

4. Click an insert effect to select it.

RESULT

The selected insert effect is loaded and automatically activated. Its plug-in panel opens.

Moving Inserts to Post-Fader or Pre-Fader Position (Cubase Elements only)

For each audio-related channel, you can add 6 pre-fader and 2 post-fader inserts.

PROCEDURE

1. Right-click an insert effect in a pre-fader position.

2. From the context menu, select **Move to Post-Fader Slot**.

    To move a post-fader insert to a pre-fader position, open its context menu and select **Move to Pre-Fader Slot**.

Bypassing Insert Effects

- To bypass all inserts, click the bypass button at the top of the **Inserts** rack.

- To bypass a single insert, click the button on the left of the inserts slot.

- To deactivate bypass, click the button again.

Saving/Loading FX Chain Presets

You can save and load all insert rack settings using FX chain presets. FX chain presets have the file name extension `.fxchainpreset`.

PROCEDURE

- In the top right corner of the **Inserts** rack, open the **Presets** pop-up menu and perform one of the following actions:
    - To save the current settings as a preset, select **Save FX Chain Preset** and name your preset.
    - To load a preset, select **Load FX Chain Preset** and select a preset.

    NOTE

    You can also apply inserts together with EQ and channel strip settings from track presets. You can load, tag, and save FX chain presets in the **MediaBay**.

Equalizers (EQ)

The **Equalizers (EQ)** rack is only available for audio-related channels. It features a built-in parametric equalizer with up to 4 bands for each audio channel.

Activating Equalizer Bands

PROCEDURE

1. On the **MixConsole** toolbar, activate **Show Channel Racks**.
2. Click **Racks** and activate **Equalizers** to show the **EQ** rack above the fader section.
3. Click **Activate Band** to activate an EQ band.

Equalizer Settings

You can make equalizer settings for the 4 bands. These have different default frequency values and different Q names. However, they all have the same frequency range (20 Hz to 20 kHz). You can specify different filter types for each individual module.
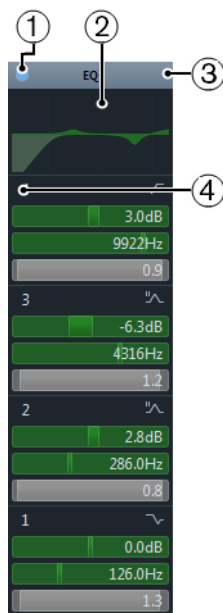
1) **Bypass EQ**

   Click to bypass all EQ bands.

2) **Curve Display**

   Click on the display in a channel to show a larger version. The display is also available in the **Inspector** and in the **Channel Settings** dialog. If you activate **Equalizer Curve** in the **Set up Window Layout** pane, the curve is removed from the EQ rack and is displayed above the racks.

Hovering with the mouse over the display shows a cross-hair cursor. The current mouse position shows the frequency, note value, offset, and level at the top or bottom of the display.

Click and hold to add a curve point and activate the corresponding EQ band. Double-click the curve point to deactivate it. Drag the curve point up or down to adjust the gain. Press [Ctrl]/[Command] to edit only the gain. Drag left or right to adjust the frequency. Press [Alt]/[Option] to edit only the frequency. Press [Shift] while dragging to set the Q-factor. To invert the EQ curve, open the context menu and select **Invert EQ Settings**.

The final curve shows the EQ settings as well as active high-cut and low-cut filters of the **Pre** rack settings. Bypassed filter settings are shown in a different color than the active settings. Disabled filter settings are hidden from the display.

NOTE

You cannot edit the high-cut and low-cut filters in the curve display. To edit the filters, open the **Pre** rack.

3) **Select Preset**

Opens a pop-up menu where you can load/save a preset.

4) **Activate Band**

Click to activate/deactivate an EQ band.

Band Settings
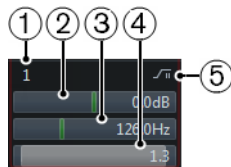
1) **Activate Band**

Activates the equalizer band.

2) **Gain**

Set the amount of cut or boost. The range is ±24 dB.

3) **Frequency**

Sets the center frequency of the frequency range to be cut or boosted. You can set the frequency either in Hz or as a note value. If you enter a note value, the frequency is automatically displayed in Hz. For example, a note value of A3 sets the frequency to 440 Hz. When you enter a note value, you can also enter a cent offset. For example, enter A5 -23 or C4 +49.

NOTE

Ensure that you enter a space between the note and the cent offset. Only in this case, the cent offsets are taken into account.

4) **Q-Factor**

Determines the width of the affected frequency range. Higher values give narrower frequency ranges.

5) **Type**

Opens a pop-up menu where you can select an EQ type for the band. Bands 1 and 4 can act as parametric, shelving, or high/low-cut filters. EQ bands 2 and 3 are always parametric filters.

RELATED LINKS
[Making Filter Settings on page 223](#)

Saving/Loading EQ Presets

You can save and load EQ presets.

PROCEDURE

▪ In the top right corner of the **EQ** rack, open the presets pop-up menu and perform one of the following actions:
   ▪ To save the current settings as a preset, select **Save Preset** and name your preset.
   ▪ To load a preset, select **Load Preset** and select a preset.

NOTE

You can also apply EQ together with insert and channel strip settings from track presets. You can load, tag, and save EQ presets in the **MediaBay**.

Channel Strips

The **Channel Strip** rack is only available for audio-related channels. It allows you to load built-in processing modules for separate channels.

Channel Strip Modules

The channel strips allow you to apply modules directly to specific channels. You can change the position of specific modules in the signal flow via drag and drop.

Gate (Cubase Elements only)

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.

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EQ

Allows you to make EQ settings.

Tools (Cubase Elements only)

Provides various tools.

Sat (Cubase Elements only)

Allows you to add warmth to the sound.

Limit (Cubase Elements only)

Allows you to avoid clipping even at high levels.

Noise Gate (Cubase Elements only)

Noise gating silences audio signals below a set threshold. As soon as the signal level exceeds the threshold, the gate opens to let the signal through.

Threshold (-60 to 0dB)

Determines the level at which **Gate** is activated. Signal levels above the set threshold trigger the gate to open, and signal levels below the set threshold close the gate.

Release (10 to 1000ms or Auto mode)

Sets the time after which the gate closes (after the set **Hold** time). If **Auto Release** is activated, **Gate** automatically finds the best release setting for the audio material.

State LED

Indicates whether the gate is open (LED lights up in green), closed (LED lights up in red), or in an intermediate state (LED lights up in yellow).

Attack (0.1 to 1000ms)

Sets the time after which the gate opens when it is triggered.

Range

Adjusts the attenuation of the gate when it is shut. If **Range** is set to `-∞`, the gate is completely shut. The higher the value, the higher the level of the signal that passes through the shut gate.

Filter Frequency (50 to 20000Hz)

If **Side-Chain** is activated, this sets the filter frequency.

Q-Factor (0.01 to 10000)

If **Side-Chain** is activated, this sets the resonance of the filter.

Listen Filter

Allows you to monitor the filtered signal.

Compressor

This channel strip module reduces the dynamic range of the audio, making softer sounds louder or louder sounds softer, or both. Open the pop-up menu to select between **Standard Compressor**, **Tube Compressor** (Cubase Elements only), and **Vintage Compressor** (Cubase Elements only).

Standard Compressor

Allows you to create smooth compression effects. Drag the compressor up or down to change its position in the signal flow.

Threshold (-60 to 0dB)

Determines the level where the compressor kicks in. Only signal levels above the set threshold are processed.

Ratio (1:1 to 8:1)

Sets the amount of gain reduction that is applied to signals above the set threshold. A ratio of 3:1 means that for every 3 dB the input level increases, the output level increases by 1 dB.

Gain Reduction LED

Indicates the amount of compression of the signal.

Attack (0.1 to 100 ms)

Determines how fast the compressor responds to signals above the set threshold. If the attack time is long, more of the early part of the signal passes through unprocessed.

Release (10 to 1000 ms or Auto mode)

Sets the time after which the gain returns to the original level when the signal drops below the threshold. If **Auto** is activated, the compressor automatically finds the best release setting for the audio material.

Make-up (0 to 24dB or Auto mode)

Compensates for output gain loss that is caused by compression. If **Auto** is activated, the knob becomes dark and the output is automatically adjusted for gain loss.

Tube Compressor (Cubase Elements only)

This versatile compressor with integrated tube-simulation allows you to achieve smooth and warm compression effects. The VU meter shows the amount of gain reduction. **Tube Compressor** features an internal side-chain section that lets you filter the trigger signal.

Input (-24.0 to 48.0dB)

Determines the compression amount. The higher the input gain, the more compression is applied.

Output (-12.0 to 12.0 dB)

Sets the output gain.

Gain Reduction LED

Indicates the amount of compression of the signal.

Attack (0.1 to 100.0 ms)

Determines how fast the compressor responds. If the attack time is long, more of the initial part of the signal passes through unprocessed.

Release (10 to 1000 ms or Auto mode)

Sets the time after which the gain returns to the original level. If **Auto** is activated, **Tube Compressor** automatically finds the best release setting for the audio material.

Drive (1.0 to 6.0)

Controls the amount of tube saturation.

Mix (0 to 100)

Sets the level balance between the dry signal and the wet signal.

VintageCompressor (Cubase Elements only)

VintageCompressor is modeled after vintage type compressors.

Input (-24 to 48 dB)

In combination with the **Output** setting, this parameter determines the compression amount. The higher the input gain setting and the lower the output gain setting, the more compression is applied.

Output (-48 to 24 dB)

Sets the output gain.

Gain Reduction LED

Indicates the amount of compression of the signal.

Attack (0.1 to 100 ms)

Determines how fast the compressor responds. If the attack time is long, more of the early part of the signal passes through unprocessed.

Punch (On/Off)

If this is activated, the early attack phase of the signal is preserved, retaining the original punch in the audio material, even with short **Attack** settings.

Release (10 to 1000 ms or Auto mode)

Sets the time after which the gain returns to its original level. If **Auto** is activated, **Vintage Compressor** automatically finds the best release setting for the audio material.

EQ

You can make equalizer settings for the 4 bands. These have different default frequency values and different Q names. However, they all have the same frequency range (20 Hz to 20 kHz). You can specify different filter types for each individual module.
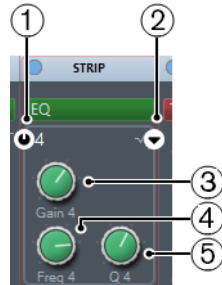
1) **Activate Band x**

Activates the equalizer band.

2) **Select EQ Band x Type**

Opens a pop-up menu where you can select an EQ type for the band. Bands 1 and 4 can act as parametric, shelving, or high/low-cut filters. EQ bands 2 and 3 are always parametric filters.

3) **Gain**

Sets the amount of cut or boost.

4) **Freq**

Sets the center frequency of the frequency range to be cut or boosted.

5) **Q**

Determines the width of the affected frequency range. Higher values give narrower frequency ranges.

Tools (Cubase Elements only)

EnvelopeShaper

This channel strip module can be used to attenuate or boost the gain of the attack and release phase of audio material. You can use the knobs to change parameter values. Be careful with levels when boosting the gain and if needed reduce the output level to avoid clipping.

Attack (-20 to 20 dB)

Changes the gain of the attack phase of the signal.

Release (-20 to 20 dB)

Changes the gain of the release phase of the signal.

Length (5 to 200 ms)

> Determines the length of the attack phase.

Output (-24 to 12 dB)

> Sets the output level.

Sat (Cubase Elements only)

> Allows you to add warmth to the sound. Open the pop-up menu to select between
> **Tape Saturation**, and **Tube Saturation**.

Tape Saturation

> This channel strip module simulates the saturation and compression of recording on
> analog tape machines.

> **Drive**

> > Controls the amount of tape saturation.

> **Dual Mode**

> > Simulates the use of two tape machines.

> **Auto Gain**

> > Adjusts the gain automatically.

> **Output**

> > Sets the output gain.

> **Drive Amount LED**

> > Indicates the amount of drive of the signal.

> **Low-Frequency**

> > This is a low shelving filter with fixed frequency.

> **High-Frequency**

> > This is a Hi Cut filter. Use the frequency fader to reduce harshness of the
> > output signal.

Tube Saturation

> This channel strip module simulates the saturation and compression of recording of
> analogue tube compressors.

> **Drive**

> > Controls the amount of tube saturation.

> **Output Gain**

> > Sets the output gain.

Drive Amount LED

Indicates the amount of drive of the signal.

Low-Frequency

This is a low shelving filter with fixed frequency.

High-Frequency

This is a Hi Cut filter. Use the frequency fader to reduce harshness.

Limit (Cubase Elements only)

Allows you to avoid clipping even at high levels. Open the pop-up menu to select between **Brickwall Limiter**, **Maximizer**, and **Standard Limiter**.

Brickwall Limiter

Brickwall Limiter ensures that the output level never exceeds a set limit.

Due to its fast attack time, **Brickwall Limiter** can reduce even short audio level peaks without creating audible artifacts. However, this channel strip module creates a latency of 1 ms. **Brickwall Limiter** features separate meters for input, output, and the amount of limiting.

Threshold (-20 to 0 dB)

Determines the level where the limiter kicks in. Only signal levels above the set threshold are processed.

Release (ms)

Sets the time after which the gain returns to the original level when the signal drops below the threshold. If **Auto** is activated, **Brickwall Limiter** automatically finds the best release setting for the audio material.

Gain Reduction LED

Displays the amount of gain reduction.

Maximizer

This channel strip module raises the loudness of audio material without the risk of clipping.

Optimize

Determines the loudness of the signal.

Output (-24 to 6 dB)

Determines the maximum output level. Set this to 0 dB to avoid clipping.

Gain Reduction LED

Displays the amount of gain reduction.

Mix (0 to 100)

Sets the level balance between the dry signal and the wet signal.

Standard Limiter

This channel strip module is designed to ensure that the output level does not exceed a set output level, to avoid clipping in following devices. **Limiter** can adjust and optimize the **Release** parameter automatically according to the audio material, or it can be set manually. **Limiter** also features separate meters for the input, output, and the amount of limiting (middle meters).

Input (-24 to 24 dB)

Adjusts the input gain.

Output (-24 to 6 dB)

Determines the maximum output level.

Gain Reduction LED

Displays the amount of gain reduction.

Release (0.1 to 1000 ms or Auto mode)

Sets the amount of time it takes for the gain to return to its original level. If **Auto** is activated, **Limiter** automatically finds the best release setting for the audio material.

Saving/Loading Strip Presets

You can save and load strip presets. Strip presets have the file name extension `.strippreset`.

PROCEDURE

- In the top right corner of the **Channel Strip** rack, open the **Presets** pop-up menu and perform one of the following actions:
  - To save the current settings as a preset, select **Save Strip Preset** and name your preset.
  - To load a preset, select **Load Strip Preset** and select a preset.

NOTE

You can also apply channel strip settings together with insert and EQ settings from track presets. You can load, tag, and save strip presets in the **MediaBay**.

Sends

The **Sends** rack for audio-related channels features send effect slots that allow you to load send effects and value sliders that allow you to determine the send level for a channel. For MIDI channels the **Sends** rack features send effect slots that allow you to load send effects.

Adding Send Effects

PROCEDURE

1. On the **MixConsole** toolbar, activate **Show Channel Racks**.
2. Click **Racks** and activate **Sends** to show the rack above the fader section.
3. Click one of the send slots to open the send selector.
4. Click a send effect to select it.
   The selected send effect is loaded.
5. Click on the left of the slot to activate the send.

Bypassing Send Effects

▪ To bypass all sends, click the bypass button at the top of the **Sends** rack.

▪ To deactivate bypass, click the button again.

Adding FX Channels to a Send

PROCEDURE

1. Right-click on the send slot to open the context menu.
2. Select **Add FX Channel to Send**.
3. In the **Add FX Channel Track** window, select the effect and configuration.
4. Click **Add Track**.

RESULT

The FX channel track is added in the **Project** window, and the send is automatically routed to it.

Using Channel Settings

You can open each **MixConsole** channel in a separate **Channel Settings** window. This allows for better overview and editing of the channel settings.

▪ To open the channel settings for a specific channel, click **E** in the fader section.

For audio-related channels, the following sections can be shown/hidden by clicking **Set up Window Layout** and activating/deactivating the corresponding options:

- **Channel Inserts**

- **Channel Faders**

- **Channel Sends**

The Channel Strip and Equalizer are always available.

The channel settings are especially suitable for the following actions:

- Moving the channel strip to Pre/Post-Inserts position

  By default, the inserts are positioned before the channel strip in the signal flow. In the **Inserts** section you can change this by clicking the arrow at the top of the **Strip** tab. The tabs are swapped.

- Making EQ settings

  The channel settings feature a large EQ curve display with several modes. By default, the equalizer controls are hidden, but you can click the little green button at the top right corner to show the equalizer controls or the equalizer knob controls below the EQ curve.

▪ Showing the output chain

If you click **Show Output Chain** ⟼ on the toolbar, the output chain is shown in the **Channel Faders** section. This allows you to keep track of more complicated output routings.

▪ Browsing through channels

RELATED LINKS

Browsing through Channels

Every channel has its own **Channel Settings** window, but you can view any channel's settings from a single window. This allows you to have a single Channel Settings window open in a convenient position on the screen and use it for all your EQ and channel effect settings.

To select a channel in the **Channel Settings** window, proceed as follows:

▪ To show the previous/next channel, click **Go to Previous/Next Channel**.

▪ To browse through the edited channels, click **Go to Last/Next Edited Channel**.

The buttons are only available if at least two channels have been edited.

▪ Select a channel in the **MixConsole** to select the corresponding channel in the **Channel Settings** window.

This is the default behavior. If this is not what you want, open the **Functions** menu and deactivate **Follow 'e' buttons or selection changes**.

▪ Select a track in the **Project** window to select the corresponding channel in the **MixConsole** and the **Channel Settings** window.

Adding Notes to a MixConsole Channel

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 type in your notes.

3. To close the notepad, press [Esc], or click in another section of the **MixConsole**.

Keyboard Navigation

The channel selector section, the channel rack section, and the fader section can be controlled with the computer keyboard.

For this, you must activate a section. An activated section is indicated by a frame.

Activating a Section for Keyboard Navigation

PROCEDURE

1. Click with the mouse in an empty area of the section to activate it.
   Activated sections are shown with a white frame.
2. Press [Tab] to activate the next section.
3. Press [Shift]-[Tab] to activate the previous section.

Navigating in a Section

Once you have activated a section, you can use the computer keyboard as described below. In the channel racks section and in the fader section, controls that are selected for keyboard control are indicated by a red frame.

- To navigate through the controls, use the arrow keys.

- To activate or deactivate a switch, press [Return].

- To expand or collapse an active rack, to open or close a value field in a slot, or to open the plug-in panel for a loaded plug-in, press [Return].

- To access the controls in the left zone, press [Ctrl]/[Command]-[Return].

- To access the controls in the middle zone, press [Return].

- To access the controls in the right zone, press [Alt]/[Option]-[Return].

- To close a pop-up menu or a plug-in panel, press [Esc].

- To enable or disable the loaded plug-in, press [Ctrl]/[Command]-[Alt]/[Option]-[Return].

Audio Effects

Cubase comes with a number of effect plug-ins included. This chapter contains general details about how to assign, use and organize effect plug-ins. The effects and their parameters are described in the separate PDF document "Plug-in Reference".

This chapter describes audio effects, i.e. effects that are used to process audio, group, VST instrument, and ReWire (not in Cubase LE) channels.

Overview

Audio effects can be used as follows:

- **Insert effects**

   These effects are inserted into the signal chain of an audio channel, which means that the whole channel signal passes through the effect. This makes inserts suitable for effects for which you do not need to mix dry and wet sound, e.g. distortion, filters or other effects that change the tonal or dynamic characteristics of the sound.

   In Cubase Elements you can have up to eight different insert effects per channel (and the same is true for output busses – for recording with master effects). In Cubase AI and Cubase LE, four insert effects per channel are available.

- **Send effects**

   Each audio channel has eight sends in Cubase Elements and four sends in Cubase AI and Cubase LE, each of which can be freely routed to an effect (or to a chain of effects).

   Send effects are practical for two reasons: you can control the balance between the dry (direct) and wet (processed) sound individually for each channel using the sends, and several different audio channels can use the same send effect. Send effects are handled by means of FX channel tracks.

VST 3 Standard

The VST 3 plug-in standard offers many improvements over the previous VST 2 standard and yet retains full backwards compatibility.

Smart Plug-In Processing

The VST 3 standard features smart plug-in processing, i.e., processing by a plug-in can be disengaged if there is no signal present. This can greatly reduce the CPU load, thus allowing for more effects to be used.

This is achieved by activating the "Suspend VST3 plug-in processing when no audio signals are received" option in the Preferences dialog (VST–Plug-ins page).

When this is activated, VST 3 plug-ins will not consume CPU power on silent passages, i.e. when no audio data runs through them.

However, be aware that this can lead to a situation where you added more plug-ins on "transport stop" than the system can handle on playback. Therefore, you should always find the passage with the largest number of events playing simultaneously to make sure that your system offers the required performance.

NOTE

Activating this option can increase your system performance a lot in certain projects, but it also makes it more unpredictable whether the project can play back fine on any timecode position of the project.

Plug-In Delay Compensation

A plug-in effect may have some inherent delay or latency. This means that it takes a brief time for the plug-in to process the audio fed into it – as a result, the output audio will be slightly delayed. This especially applies to dynamics processors featuring look-ahead functionality.

Cubase provides full plug-in delay compensation throughout the entire audio path. All plug-in delays are compensated for, maintaining the sync and timing of all audio channels.

Normally, you do not have to make any settings for this. However, VST 3 dynamics plug-ins with look-ahead functionality have a "Live" button, allowing you to disengage the look-ahead to minimize latency, if they are to be used during realtime recording (see the separate PDF document "Plug-in Reference").

You can also constrain the delay compensation, which is useful to avoid latency when recording audio or playing a VST instrument in real time.

RELATED LINKS

Tempo Sync

Plug-ins can receive timing and tempo information from the host application (in this case, Cubase). Typically, this is used to synchronize certain plug-in parameters (such as modulation rates or delay times) to the project tempo.

▪ This information is automatically provided to any VST plug-in (2.0 or later) that requests it.

You do not have to make any special settings for this.

▪ You set up tempo sync by specifying a base note value.

You can use straight, triplet or dotted note values (1/1 to 1/32).

Please refer to the separate PDF document "Plug-in Reference" for details about the included effects.

Insert Effects

As the name implies, insert effects are inserted into the audio signal path – this means that the audio channel data will be routed through the effect.

In Cubase Elements, you can add up to eight different insert effects independently for each audio-related channel (audio track, group channel track, FX channel track, VST instrument channel, or ReWire channel) or output bus. In Cubase AI and Cubase LE, four insert slots are available for audio-related tracks. Also, ReWire channels are not available in Cubase LE.

The signal passes through the effects in series from the top downwards, with the signal path shown below:
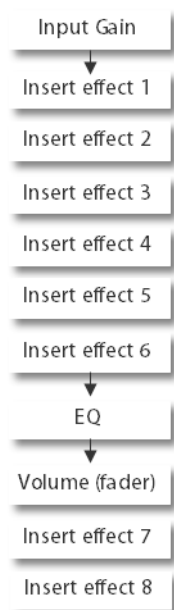
In Cubase Elements, slots 7 and 8 are post-EQ and post-fader. Post-fader slots are best suited for insert effects where you do not want the level to be changed after the effect, such as dithering and maximizers – both typically used as insert effects for output busses.

NOTE

Applying several effects on several channels may be too much for your CPU to handle! If you want to use the same effect with the same settings on several channels, it may be more efficient to set up a group channel and to apply your effect only once, as a single insert for this group. You can use the VST Performance window to keep an eye on the CPU load.

RELATED LINKS

Routing Through Insert Effects

Insert effect settings are available in the Channel Settings window and the Inspector.

The examples below show the Channel Settings window, but the procedures are the same for all the inserts sections.

PROCEDURE

1.   Bring up the Channel Settings window.

     The insert slots are found on the Inserts tab.

2.   Move the mouse over the first insert slot, click on the arrow symbol that is displayed, and select an effect from the selector.
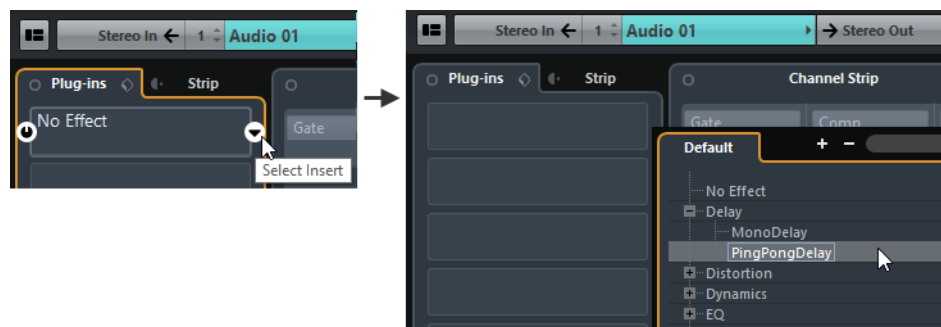
RESULT

The effect is loaded and automatically activated and its control panel opens. You can open the control panel for a loaded effect by double-clicking in the middle of the insert slot.

▪   If the effect has a dry/wet Mix parameter, you can use this to adjust the balance between the dry signal and the effect signal.

▪   To remove an effect, open the pop-up selector and select "No Effect".

- In Cubase Elements, you can add up to 8 insert effects per channel this way. In Cubase AI and Cubase LE, 4 insert effects can be added.

- You can reorder the effects by clicking and dragging.

- You can copy an effect into another effect slot (for the same channel or between channels) by holding down [Alt]/[Option] and dragging it onto another effect slot.

- You can open all plug-ins inserted for a particular track at once by holding [Ctrl]/[Command]-[Shift]-[Alt]/[Option] and clicking the edit button for that track in the Inspector or in the MixConsole. [Shift]-click the edit button to close any insert plug-ins for the track.

Deactivating vs. Bypassing

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 either deactivate or bypass it.

Deactivating means to terminate all processing, whereas bypassing means to play back only the unprocessed original signal – a bypassed effect is still processing in the background. Bypassing allows for crackle-free comparison of the original ("dry") and the processed ("wet") signal.

- To bypass an effect, click the button on the left in the insert slot.

  When an effect is bypassed, the slot turns gray.

- To deactivate an effect, hold [Alt]/[Option] and click its Bypass button.
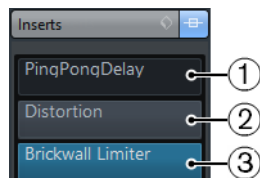
1) This effect is deactivated.
2) This effect is bypassed.
3) This effect is activated.

- To bypass all inserts for a track, click the "Bypass Inserts" button.

  This button can be found on the right of the header of the Inserts section in the Inspector. It lights up in yellow to indicate that one or more inserts of this track are bypassed.
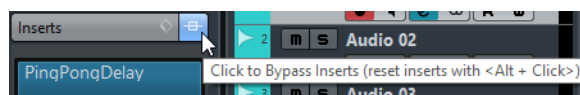
  In the Channel Settings window, you can find the button on the left of the Inserts tab.

Adding Insert Effects to Busses

You can add insert effects to busses. The easiest way to add insert effects is the Channel settings window.

If you add insert effects to an output bus, all audio routed to that bus is affected.

Dithering (Cubase Elements only)

Dithering is a method for controlling the noise produced by quantization errors in digital recordings. The theory behind this is that during low level passages, only a few bits are used to represent the signal, which leads to quantization errors and hence distortion.

For example, when "truncating bits", as a result of moving from 24 to 16 bit resolution, quantization errors are added to an otherwise immaculate recording. By adding a special kind of noise at an extremely low level, the effect of these errors is minimized. The added noise could be perceived as a very low-level hiss under exacting listening conditions. However, this is hardly noticeable and much preferred to the distortion that otherwise occurs.

When should I use dithering?

- Consider dithering when you mix down to a lower resolution, either in realtime (during playback) or with the Export Audio Mixdown function.

  A typical example is when you mix down a project to a 16-bit stereo audio file for audio CD burning.

What is a "lower resolution" then? Well, Cubase uses 32-bit float resolution internally, which means that all integer resolutions (16 bit, 24 bit, etc.) are lower. The negative effects of truncation (no dithering) are most noticeable when mixing down to 8 bit, 16 bit and 20 bit format; whether to dither when mixing down to 24 bits is a matter of taste.

Applying Dithering

PROCEDURE

1. Open the Channel Settings window for the output channel by clicking its Edit button in the MixConsole.

2. Open the effect selector for slot 7 or 8.

   The two last Insert effect slots (for all channels) are post-fader, which is crucial for a dithering plug-in. The reason is that any master gain change applied after dithering would bring the signal back to the internal 32 bit float domain, rendering the dithering settings useless.

3. Select the included UV22HR plug-in from the selector.

4. Make sure that the plug-in is set to dither to the correct resolution.

    This would be the resolution of your audio hardware (on playback) or the desired resolution for the mixdown file you want to create (as set in the Export Audio Mixdown dialog).

5. Use the other parameters in the control panel to set up the dithering to your liking.

RELATED LINKS

Adding Insert Effects to Group Channels

You can add insert effects to group channels. This is useful if you have several audio tracks that you want to process through the same effect (e.g. different vocal tracks that you want to be processed by the same compressor).

PROCEDURE

1. Create a group channel track and route it to the desired output bus.

2. Add the desired effect to the group channel as an insert effect.

3. Route the audio track to the group channel.

RESULT

The signal from the audio track is sent directly to the group, where it passes through the insert effect.

NOTE

You can also process mono audio tracks through stereo insert effects.

Freezing Insert Effects for a Track

Freezing insert effects for a track allows you to reduce processor power.

▪   To freeze a track, click its Freeze button in the Inspector.
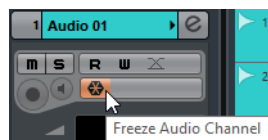
▪   The Freeze Channel Options dialog opens, allowing you to set a "Tail Size" time in seconds.

    This adds time at the end of the rendered file to allow reverb and delay tails to fully fade out.

- The program now renders the output of the track, including all pre-fader insert effects, to an audio file.

  This file is placed in the "Freeze" folder within the Project folder.

- The frozen audio track is locked for editing in the Project window.

  The frozen insert effects cannot be edited or removed and you cannot add new insert effects for the track (except post-fader effects).

- On playback, the rendered audio file is played back. You can still adjust the level and panning in the MixConsole, make EQ settings and adjust the effect sends.

  In the MixConsole, the channel for a frozen track is indicated by a "snow flake" symbol above the channel name.

After freezing the Inserts for a track, you hear the track play back as before but the insert effects do not have to be calculated in real time, easing the load on the computer processor. Typically, you would freeze a track when it is finished and you do not need to edit it anymore.

NOTE

You can only freeze audio tracks this way, not group channel tracks or FX channel tracks.

NOTE

Cubase Elements only: Post-fader inserts can not be frozen.

- To unfreeze a frozen track, click its Freeze button again.

Send Effects

Send effects are outside of an audio channel's signal path, i.e. the audio data to be processed must be sent to the effect.

To this end, Cubase provides FX channel tracks. When you have created such a track, it is added to the track list and can be selected as a routing target in the Send slots of audio channels.

- When selecting an FX channel track in one of the send slots of an audio channel, the audio is sent to the FX channel and through any insert effects set up for it.

  The sends can be routed to different FX channels, and thus different FX channel insert effect configurations. You control the amount of signal sent to the FX channel by adjusting the effect send level.

- If you have added several effects to the FX channel, the signal passes through the effects in series, from the top (the first slot) downward.

  This allows for "custom" send effect configurations – e.g. a chorus followed by a reverb followed by an EQ and so on.

- The FX channel track has its own channel in the MixConsole.

  Here you can adjust the effect return level and balance, add EQ and route the effect return to any output bus.

- Each FX channel track can have any number of automation tracks, for automating various effect parameters.

RELATED LINKS

Adding an FX Channel Track

PROCEDURE

1. Select **Project > Add Track > FX Channel**.

   A dialog opens.
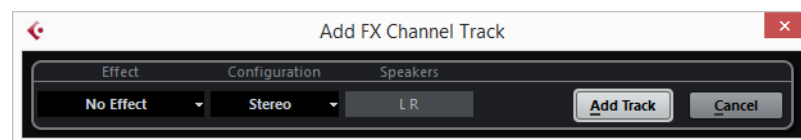
2. Select a channel configuration for the FX channel track.

   Normally, stereo is a good choice since most effect plug-ins have stereo outputs.

3. Select an effect for the FX channel track.

4. Click **Add Track**.

   An FX channel track is added to the track list, and the selected effect, if any, is loaded into the first insert effect slot for the FX channel (in that case, the lit Inserts tab for the FX channel track in the Inspector indicates that an effect has been assigned and automatically activated).

RESULT

All FX channel tracks you create will appear in a dedicated "folder" track in the track list. This makes it easy to manage and keep track of all your FX channel tracks, and also allows you to save screen space by folding in the FX Channel folder.

FX channel tracks are automatically named "FX 1", "FX 2" etc., but you can rename them if you wish. Just double-click the name of an FX channel track in either the track list or the Inspector and type in a new name.

Adding and Setting Up Effects

You can add a single insert effect when you create the FX channel track. To add and set up effects after the FX channel track is created, you can either use the Channel Settings window or the Inspector for the track.

PROCEDURE

1. In the track list, the MixConsole, or the Inspector, click the Edit button for the FX channel track to open the Channel Settings window.

   On the left in the window you can find the Inserts section.

2. On the toolbar, open the Output pop-up menu and make sure that the FX channel is routed to the correct output bus.

3. To add an insert effect in an empty slot (or to replace the current effect in a slot), click the slot and select an effect from the selector.

4. In the control panel of the effect, set the wet/dry Mix control to all wet.

   This is because you control the balance between the wet and the dry signal with the effect sends.

RESULT

The handling and operation of insert plug-ins for FX channels is the same as for audio channels. You can adjust level, pan and EQ for the send in the Channel Settings window, the MixConsole or in the Inspector.

RELATED LINKS

Routing an Audio Channel to the FX Channel

The next step is to set up a send for an audio channel and route it to the FX channel.

This can be done in the Channel Settings window or in the Inspector for the audio track. The example below shows the Channel Settings window, but the procedure is similar for all the sections:

PROCEDURE

1. Click the "e" button for an audio channel to bring up its Channel Settings window.

    Each of the sends has the following controls:
    ▪   An On/Off button for activating/deactivating the effect
    ▪   A send level slider

2. Click the arrow icon in an empty send slot to open the selector, and select an FX channel track as routing destination.
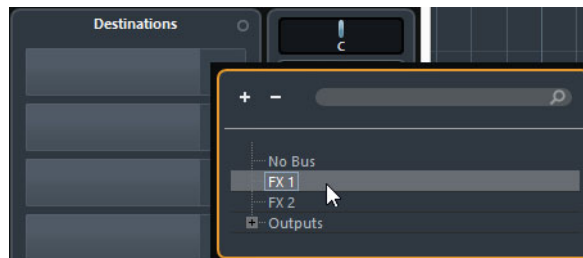
    ▪   If the first item on this menu ("No Bus") is selected, the send is not routed anywhere.
    ▪   Items called "FX 1", "FX 2" etc. correspond to existing FX tracks. If you renamed an FX track, that name will appear on this menu instead of the default.
    ▪   The menu also allows for routing a send directly to output busses, separate output bus channels or Group channels.

3. Activate the On/Off button for the send.
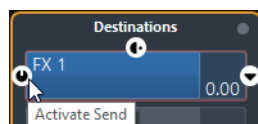
4. Click and drag the send level slider to determine how much of the signal from the audio channel is routed to the FX channel.
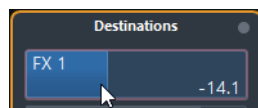
    Setting the Send level

    You can also double-click and enter a value numerically. If you hold down [Alt]/[Option] when double-clicking, the send destination is shown in the Channel Settings window. If you have routed the send to an FX channel, the plug-in panel opens.

    NOTE

    To determine how much of the signal from the FX channel is sent to the output bus, open the Channel Settings window for the FX track and adjust the effect return level.

Pre/Post Fader Sends

Normally you want the effect send to be proportional to the channel volume (post-fader send). However, you can send the signal to the FX channel before the audio channel's volume fader.

- If you want the signal to be sent to the FX channel before the audio channel's volume fader in the MixConsole, right-click on a send and select "Move to Pre-Fader".
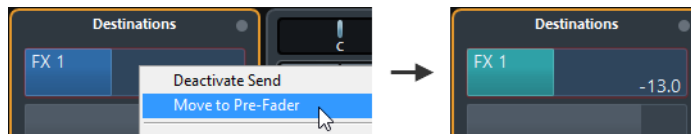
The picture below shows where the sends are "tapped" from the signal in pre and post-fader mode:
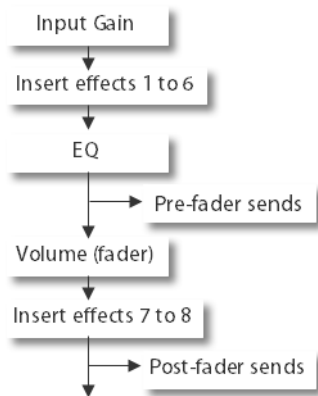
NOTE

Use the channel's Mute button to determine whether a send in pre-fader mode is affected. This is done with the "Mute Pre-Send when Mute" option in the Preferences dialog (VST page).

Effect Control Panel

You can open the control panel for the loaded plug-in by double-clicking the center part of an insert or a send slot. If you edit the parameters for an effect, these settings are saved automatically with the project.

The contents, design and layout of the control panel depend on the selected effect.

1) Activate Effect

2) Bypass Effect

3) Read/Write Automation

4) Switch between A/B Settings

5) Copy A to B

6) Preset selector

7) Functions menu

NOTE

The included effects and their parameters are described in detail in the separate PDF document "Plug-in Reference".

Comparing Effect Settings

You can compare two different parameter settings for an effect.

PROCEDURE

1. Adjust the effect parameters for setting A.

2. Click **A/B Setting** to activate setting B.
   As a starting point for setting B, the parameters for setting A are copied.

3. Adjust the parameters for setting B.

4. Click **A/B Setting** to activate setting A and compare both settings.

You can compare the settings between A and B using the corresponding buttons. Settings A and B are saved with the project.

Setting A active

Setting B active

Effect Presets

In the MediaBay – or with certain limits in the Save Preset dialog – you can assign attributes to presets which allow you to organize and browse them according to various criteria. Cubase comes with categorized track and VST presets that you can use straight out of the box.

You can also preview effect presets before loading them which considerably speeds up the process of finding the right effect preset.

Effect presets can be divided into the following main categories:

- VST presets for a plug-in.

  These are plug-in parameter settings for a specific effect.

- Inserts presets that contain insert effect combinations.

  These can contain the whole insert effects rack with settings for each effect.

Presets Browser

The Presets browser contains the Results, the Filters and the Location Tree sections.
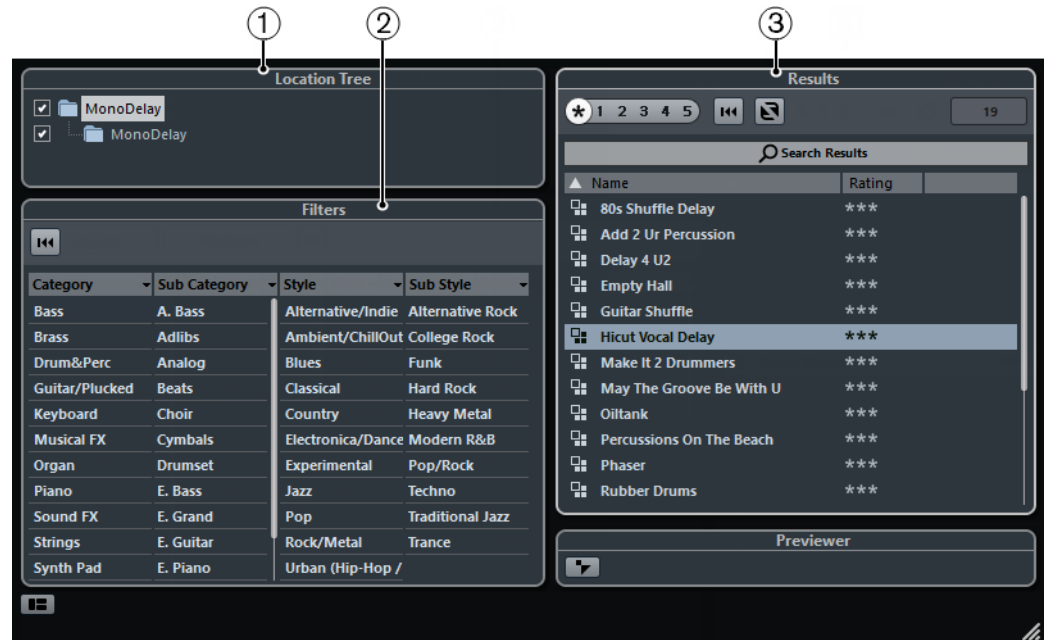
1) **Location Tree section**

Shows the folder that is searched for preset files.

To show the Location Tree section, click **Set Up Window Layout** and activate **Location Tree**. This is only available if **Filters** is also active.

2) **Filters section**

Shows the available preset attributes for the selected effect.

To show the Filters section, click **Set Up Window Layout** and activate **Filters**.

3) **Results section**

Lists the available presets for the selected effect.

Selecting Effect Presets

Most VST effect plug-ins come with a number of useful presets for instant selection.

PROCEDURE

1. Load an effect, either as a channel insert or into an FX channel.
   The control panel for the effect is displayed.

2. Perform one of the following actions to open the Presets browser:
   - Click in the preset field at the top of the control panel.

▪ Click the button to the right of the preset field and select "Load Preset".

This opens the Presets browser.
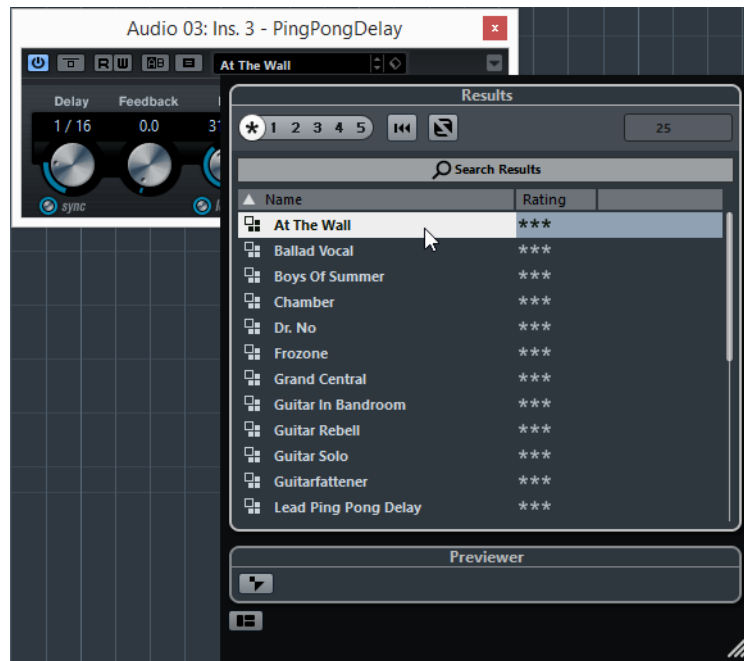
You can also open the Presets browser from the Inspector (Inserts tab) or the Channel Settings window.

3. In the Results section, select a preset from the list.

4. Activate playback to audition the selected preset.

Step through the presets until you find the right sound. It may be helpful to set up cycle playback of a section to make comparisons between different preset settings easier.

5. When you have found the preset that you want, double-click on it (or click outside the Presets browser).

The preset is applied.

▪ To return to the preset that was selected when you opened the Presets browser, click the "Revert to Last Setting" button.

NOTE

The preset handling for VST 2 plug-ins is slightly different.

RELATED LINKS
Earlier VST Effect Presets on page 257

Saving Effect Presets

You can save your effect settings as presets for further use.

1. Open the Preset Management pop-up menu.

2. Select **Save Preset**.

   The **Save Preset** dialog opens.

3. In the **New Preset** section, enter a name for the new preset.

4. Optional: Click the button at the bottom left to open the **Attribute Inspector** and save attributes for the preset.

5. Click **OK** to save the preset and exit the dialog.

RESULT

User-defined presets are saved in the following location:

- Windows: `\Users\<user name>\My Documents\VST3 Presets\<company>\<plug-in name>`

- Mac: `/Users/<user name>/Library/Audio/Presets/<company>/<plug-in name>`

NOTE

You cannot change the default folders, but you can add further subfolders inside the individual effect preset folders (by clicking the New Folder button).

Default Effect Presets

You can save a default effect preset with your parameter settings. This is loaded automatically when you open the effect.

- To save a default preset, open the Preset Management pop-up menu, and select **Save as Default Preset**.

- To recall a default preset, open the Presets browser and select **Default**. You can also open the plug-in context menu and select **Default Preset > Reset to Default Preset**.

Copying and Pasting Effect Presets

You can copy a plug-in preset and paste it in another instance of the same plug-in.

PROCEDURE

1.   Open the plug-in context menu and select **Copy (plug-in name) Setting**.

2.   Select another instance of the same plug-in, open the context menu and select **Paste (plug-in name) Setting**.

Earlier VST Effect Presets

Some VST 2.x plug-ins have presets in the old FX program/bank format (.fxp/.fxb).

To use all features, you must convert these presets to VST 3 presets. If you save new presets for the included VST 2 plug-ins, these will automatically be saved in the .vstpreset format.

IMPORTANT

All VST 2 presets can be converted to VST 3 presets.

Converting Earlier VST Presets

PREREQUISITE

You have created your own .fxp/.fxb presets with a previous version of Cubase (or any other VST 2 application).

PROCEDURE

1.   Load any VST 2 effect you may have installed, and open the Preset Management pop-up menu.
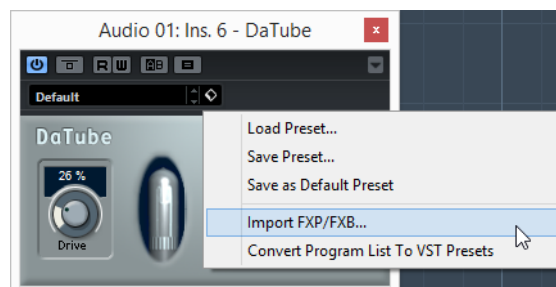
2.   Select **Import FXB/FXP**.

3.   In the file dialog, locate the file and click Open.

If you load a bank (.fxb), it will replace the current set of all effect programs. If you load a single program, it will replace the currently selected effect program only.

You can convert the current program list to VST presets by opening the Preset Management pop-up menu and selecting **Convert Program List to VST Presets**.

After converting, the presets will be available in the Presets browser. The converted presets will be stored in the VST 3 Preset folder.

Saving Insert Presets

You can save the complete insert effect rack for a channel together with all parameter settings as an inserts preset. Inserts presets can be applied to audio, instrument, FX channel, or group tracks.

PROCEDURE

1. In the track list, select the track and in the Inspector, open the Inserts section.

2. Load a combination of insert effects and adjust the parameters (or select effect presets) for each effect.

3. At the top of the Inserts tab, click the Preset Management button to open the pop-up menu for the inserts and select "Save FX Chain Preset".

    This can also be done from the Channel Settings window using the Preset Management button at the top of the Inserts section.
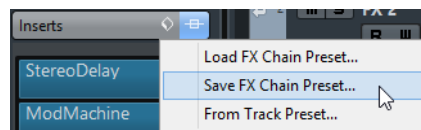
4. In the dialog that opens, type in a name for the preset.

5. Select the track (audio/group/instrument/FX channel) to which you want to apply the new preset.

6. On the Inserts tab, click the Preset Management button and select "Load FX Chain Preset".
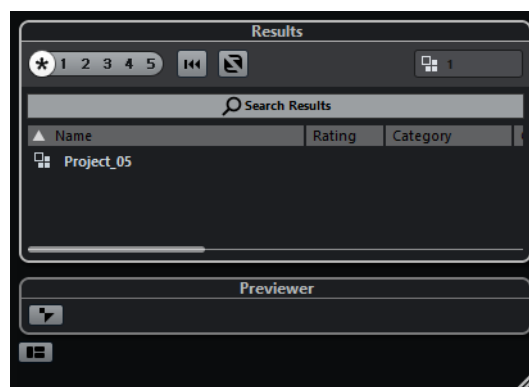
7. In the dialog that opens, select the preset that you created.

    The effects are loaded into the Insert slots of the new track.

    NOTE

    When loading insert combination presets, any plug-ins that were previously loaded for the track will be removed, regardless of whether these slots are used in the preset.

Extracting Insert Effect Settings from Track Presets

You can extract the effects used in a track preset and load them into your inserts rack.

1. On the Preset Management pop-up menu, select **From Track Preset**.

2. In the dialog, select an item in the list.
   The effects used in the track preset are loaded.
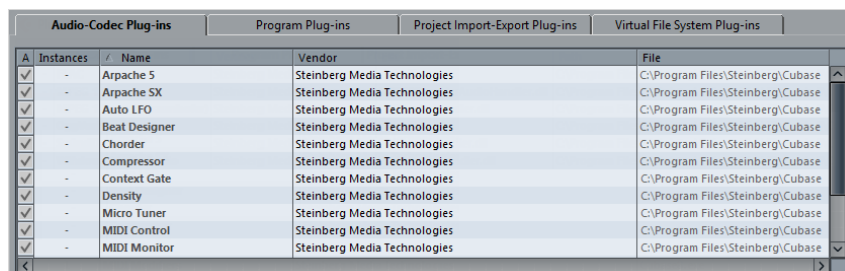
RELATED LINKS

Plug-In Information Window

The **Plug-in Information** window lists all the available audio-codec plug-ins, program plug-ins, project import-export plug-ins, and the virtual file system plug-ins.

- To open the **Plug-in Information** window, select **Devices > Plug-in Information**.

A	Instances	⁄ Name	Vendor	File
✓	-	Arpache 5	Steinberg Media Technologies	C:\Program Files\Steinberg\Cubase
✓	-	Arpache SX	Steinberg Media Technologies	C:\Program Files\Steinberg\Cubase
✓	-	Auto LFO	Steinberg Media Technologies	C:\Program Files\Steinberg\Cubase
✓	-	Beat Designer	Steinberg Media Technologies	C:\Program Files\Steinberg\Cubase
✓	-	Chorder	Steinberg Media Technologies	C:\Program Files\Steinberg\Cubase
✓	-	Compressor	Steinberg Media Technologies	C:\Program Files\Steinberg\Cubase
✓	-	Context Gate	Steinberg Media Technologies	C:\Program Files\Steinberg\Cubase
✓	-	Density	Steinberg Media Technologies	C:\Program Files\Steinberg\Cubase
✓	-	Micro Tuner	Steinberg Media Technologies	C:\Program Files\Steinberg\Cubase
✓	-	MIDI Control	Steinberg Media Technologies	C:\Program Files\Steinberg\Cubase
✓	-	MIDI Monitor	Steinberg Media Technologies	C:\Program Files\Steinberg\Cubase

Update

Makes Cubase re-scan the designated plug-in folders for updated plug-in information.

The following columns are available:

Instances

Indicates how many instances of the plug-in are currently used in Cubase.

Name

The name of the plug-in.

Vendor

The manufacturer of the plug-in.

File

The name of the plug-in with extension.

Path

The path and name of the folder in which the plug-in file is located.

Category

Indicates the category of each plug-in.

Version

The version of the plug-in.

SDK

Shows with which version of the VST protocol a plug-in is compatible.

Managing Plug-Ins in the Plug-In Information Window

- To make it available for selection, activate the checkbox in the left column.
  Only the enabled plug-ins will appear on the effect selectors.

- To see where a plug-in is used, click in the Instances column.
  A pop-up opens and shows where each plug-in is used.

NOTE

A plug-in may be in use even if it is not enabled in the left column.

You might for example have opened a project containing effects that are currently disabled on the menu. The left column only determines whether or not the plug-in is visible on the effect selectors.

Exporting Plug-In Information Files

You can save plug-in information as an XML file, for example for archiving purposes or troubleshooting.

- The plug-in information file contains information on the installed/available plug-ins, their version, vendor, etc.

- The XML file can then be opened in any editor application supporting the XML format.

NOTE

The export function is not available for program plug-ins.

PROCEDURE

1. In the **Plug-in Information** window, right-click on a tab and select **Export**.
   A file dialog opens.

2.	In the dialog, specify a name and location for the plug-in information export file.

3.	Click **OK** to export the file.

Audio processing and functions

Background

Audio processing in Cubase can be called "non-destructive", in the sense that you can always undo changes or revert to the original versions. This is possible because processing affects audio clips rather than the actual audio files, and because audio clips can refer to more than one audio file.

This is how it works:

PROCEDURE

1. If you process an event or a selection range, a new audio file is created in the Edits folder, within your project folder.

   This new file contains the processed audio, while the original file is unaffected.

2. The processed section of the audio clip (the section corresponding to the event or selection range) then refers to the new, processed audio file.

   The other sections of the clip will still refer to the original file.
   - The original, unprocessed audio file can still be used by other clips in the project, by other projects or by other applications.

Audio processing

You apply processing by making a selection and selecting a function from the Process submenu of the Audio menu.

Processing is applied according to the following rules:

- When events are selected in the Project window or the Audio Part Editor, the processing will be applied to these events only.

  Processing will only affect the clip sections that are referenced by the events.

- When an audio clip is selected in the Pool, the processing will be applied to the whole clip.

- When you have made a selection range, the processing will be applied to this range only.

  Other sections of the clip are not affected.

If you attempt to process an event that is a shared copy (i.e. the event refers to a clip that is used by other events in the project), you are asked whether you want to create a new version of the clip.

Select "New Version" if you want the processing to affect the selected event only. Select "Continue" if you want the processing to affect all shared copies.

Common settings and features

If there are any settings for the selected Audio processing function, these will appear when you select the function from the Process submenu. While most settings are specific for the function, some features and settings work in the same way for several functions.

The "More…" button

If the dialog has a lot of settings, some options may be hidden when the dialog opens.

- To reveal these, click the "More…" button.

| Help | More... | Preview | Process | Cancel |

- To hide the settings, click the button again (now labeled "Less…").

The Preview, Process, and Cancel buttons

These buttons have the following functionality:

Preview button

Allows you to listen to the result of the processing with the current settings. Playback will continue repeatedly until you click the button again (the button is labeled "Stop" during Preview playback). You can make adjustments during Preview playback, but the changes are not applied until the start of the next "lap". Some changes may automatically restart the Preview playback from the beginning.

NOTE

To start or stop previewing, you can also press [Space].

Process button

Performs the processing and closes the dialog.

NOTE

To perform the process, you can also press [Enter] or [Return].

Cancel button

Closes the dialog without processing.

Pre/Post-Crossfade

Some processing functions allow you to gradually mix the effect in or out. This is done with the Pre/Post-Crossfade parameters. For example, if you activate Pre-Crossfade and specify a value of 1000 ms, the processing is applied gradually from the start of selection, reaching full effect 1000 ms after the start. Similarly, if you activate Post-Crossfade, the processing is gradually removed, starting at the specified interval before the end of the selection.

IMPORTANT

The sum of the Pre-Crossfade and Post-Crossfade times cannot be larger than the length of the selection.

This only works if the entire audio event is selected (separately or as part of a selection range).

Envelope

The Envelope function allows you to apply a volume envelope to the selected audio.
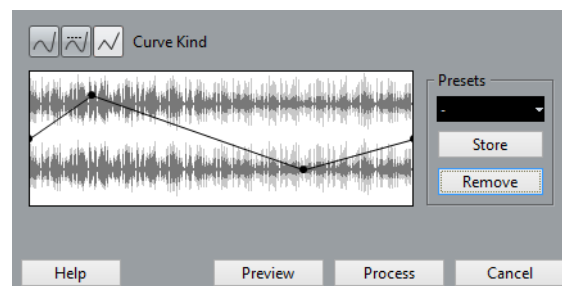
The dialog contains the following settings:

Curve Kind buttons

> These determine whether the envelope curve consists of spline curve segments (left button), damped spline segments (middle button) or linear segments (right button).

Envelope display

> Shows the shape of the envelope curve. The resulting waveform shape is shown in dark gray, with the current waveform shape in light gray. You can click on the curve to add points, and click and drag existing points to change the shape. To remove a point from the curve, drag it outside the display.

Presets

> If you have set up an envelope curve that you may want to apply to other events or clips, you can save it as a preset by clicking the Store button.

> - To apply a stored preset, select it from the pop-up menu.

> - To rename the selected preset, double-click on the name and enter a new one in the dialog that opens.

- To remove a stored preset, select it from the pop-up menu and click Remove.

Fade In and Fade Out

For a description of these functions, click on the related link.

Gain

Allows you to change the gain (level) of the selected audio.
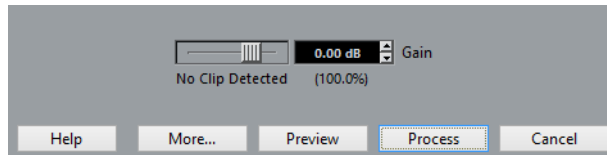
The dialog contains the following settings:

Gain

This is where you set the desired gain, between -50 and +20 dB. The setting is also indicated below the Gain display as a percentage.

Clipping detection text

If you use the Preview function before applying the processing, the text below the slider indicates whether the current settings result in clipping (audio levels above 0 dB). If that is the case, lower the Gain value and use the Preview function again.

- If you want to increase the level of the audio as much as possible without causing clipping, use the Normalize function instead.

Pre/Post-Crossfade

Some processing functions allow you to gradually mix the effect in or out. This is done with the Pre/Post-Crossfade parameters. For example, if you activate Pre-Crossfade and specify a value of 1000 ms, the processing is applied gradually from the start of selection, reaching full effect 1000 ms after the start. Similarly, if you activate Post-Crossfade, the processing is gradually removed, starting at the specified interval before the end of the selection.

IMPORTANT

The sum of the Pre-Crossfade and Post-Crossfade times cannot be larger than the length of the selection.

Merge Clipboard

This function mixes the audio from the clipboard into the audio selected for processing, starting at the beginning of the selection.
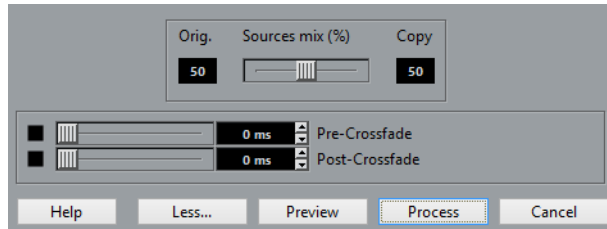
IMPORTANT

For this function to be available, you need to have cut or copied a range of audio in the Sample Editor first.

The dialog contains the following settings:

Sources mix

Allows you to specify a mix ratio between the original (the audio selected for processing) and the copy (the audio on the clipboard).

Pre/Post-Crossfade

Some processing functions allow you to gradually mix the effect in or out. This is done with the Pre/Post-Crossfade parameters. For example, if you activate Pre-Crossfade and specify a value of 1000 ms, the processing is applied gradually from the start of selection, reaching full effect 1000 ms after the start. Similarly, if you activate Post-Crossfade, the processing is gradually removed, starting at the specified interval before the end of the selection.

IMPORTANT

The sum of the Pre-Crossfade and Post-Crossfade times cannot be larger than the length of the selection.

Noise Gate

Scans the audio for sections weaker than a specified threshold level and replaces them with silence.
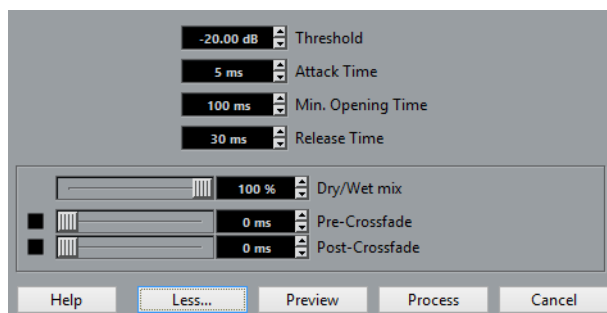
The dialog contains the following settings:

Threshold

The level below which you want audio to be silenced. Levels below this value will close the gate.

Attack Time

The time it takes for the gate to open fully after the audio level has exceeded the threshold level.

Min. Opening Time

This is the shortest time the gate will remain open. If you find that the gate opens and closes too often when processing material that varies rapidly in level, try raising this value.

Release Time

The time it takes for the gate to close fully after the audio level has dropped below the threshold level.

Dry/Wet mix

Allows you to specify a mix ratio between "dry" and processed sound.

Pre/Post-Crossfade

Some processing functions allow you to gradually mix the effect in or out. This is done with the Pre/Post-Crossfade parameters. For example, if you activate Pre-Crossfade and specify a value of 1000 ms, the processing is applied gradually from the start of selection, reaching full effect 1000 ms after the start. Similarly, if you activate Post-Crossfade, the processing is gradually removed, starting at the specified interval before the end of the selection.

IMPORTANT

The sum of the Pre-Crossfade and Post-Crossfade times cannot be larger than the length of the selection.

Normalize

The Normalize function allows you to specify the desired maximum level of the audio. It then analyzes the selected audio and finds the current maximum level. Finally it subtracts the current maximum level from the specified level and raises the gain of the audio by the resulting amount (if the specified maximum level is lower than the current maximum, the gain will be lowered instead). A common use for Normalizing is to raise the level of audio that was recorded at too low an input level.
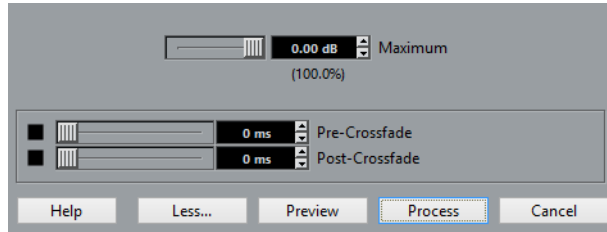
The dialog contains the following settings:

Maximum

The desired maximum level for the audio, between -50 and 0 dB. The setting is also indicated below the Gain display as a percentage.

Pre/Post-Crossfade

Some processing functions allow you to gradually mix the effect in or out. This is done with the Pre/Post-Crossfade parameters. For example, if you activate Pre-Crossfade and specify a value of 1000 ms, the processing is applied gradually from the start of selection, reaching full effect 1000 ms after the start. Similarly, if you activate Post-Crossfade, the processing is gradually removed, starting at the specified interval before the end of the selection.

IMPORTANT

The sum of the Pre-Crossfade and Post-Crossfade times cannot be larger than the length of the selection.

Phase Reverse

Reverses the phase of the selected audio, turning the waveform "upside down".

The dialog contains the following settings:

Phase Reverse on

When processing stereo audio, this pop-up menu allows you to specify which channel(s) are phase-reversed.

Pre/Post-Crossfade

Some processing functions allow you to gradually mix the effect in or out. This is done with the Pre/Post-Crossfade parameters. For example, if you activate Pre-Crossfade and specify a value of 1000 ms, the processing is applied gradually from the start of selection, reaching full effect 1000 ms after the start. Similarly, if you activate Post-Crossfade, the processing is gradually removed, starting at the specified interval before the end of the selection.

IMPORTANT

The sum of the Pre-Crossfade and Post-Crossfade times cannot be larger than the length of the selection.

Remove DC Offset

This function will remove any DC offset in the audio selection. A DC offset is when there is too large a DC (direct current) component in the signal, sometimes visible as the signal not being visually centered around the "zero level axis". DC offsets do not affect what you actually hear, but they affect zero crossing detection and certain processing, and it is recommended that you remove them.

IMPORTANT

It is recommended that this function is applied to complete audio clips, since the DC offset (if any) is normally present throughout the entire recording.

Resample

The Resample function can be used for changing the length, tempo and pitch of an event.
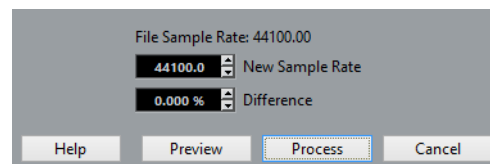
The original sample rate of the event is listed in the dialog. Resample the event to a higher or lower sample rate by either specifying a sample rate or by specifying the difference (as a percentage value) between the original sample rate and the desired new one.

- Resampling to a higher sample rate will make the event longer and cause the audio to play back at a slower speed with a lower pitch.

- Resampling to a lower sample rate will make the event shorter and cause the audio to play back at a faster speed with a higher pitch.

- You can audition the result of the resampling by entering the desired value and clicking "Preview".

  The event will then be played back as it will sound after the resampling.

- When you are satisfied with the preview result, click "Process" to close the dialog and apply the processing.

Reverse

Reverses the audio selection, as when playing a tape backwards. There are no parameters for this function.

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Silence

Replaces the selection with silence. There are no parameters for this function.

Stereo Flip

This function works with stereo audio selections only. It allows you to manipulate the left and right channel in various ways.

The dialog contains the following parameters:

Mode

This pop-up menu determines what the function does:

- **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 is typically used as a "Karaoke effect", for removing centered mono material from a stereo signal.

Time Stretch

This function allows you to change the length and "tempo" of the selected audio without affecting the pitch.
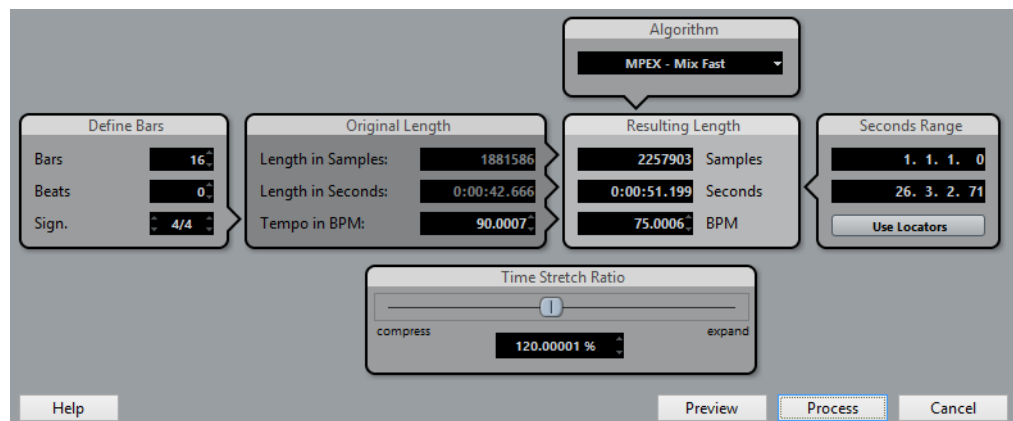
The dialog contains the following parameters:

Define Bars section

In this section, you set the length of the selected audio and the time signature:

- **Bars**
  If you use the tempo setting (see below), specify the length of the selected audio here, in bars.

- **Beats**
  If you use the tempo setting, specify the length of the selected audio here, in beats.

- **Sign.**
  If you use the tempo setting, specify the time signature here.

Original Length section

This section contains information and settings regarding the audio selected for processing:

- **Length in Samples**
  The length of the selected audio, in samples.

- **Length in Seconds**
  The length of the selected audio, in seconds.

- **Tempo in BPM**
  If you are processing music, and know the actual tempo of the audio, you can enter it here as beats per minute. This makes it possible to time-stretch the audio to another tempo, without having to compute the actual time stretch amount.

Resulting Length section

These settings are used if you want to stretch the audio to fit within a specific time span or tempo. The values will change automatically if you adjust the Time Stretch Ratio (see below).

- **Samples**
  The desired length in samples.

- **Seconds**
  The desired length in seconds.

- **BPM**
  The desired tempo (beats per minute). For this to work, you have to know the actual tempo of the audio, and specify this (along with time signature and length in bars) in the Original Length section to the left.

Seconds Range section

These settings allow you to set the desired range for the time stretch.

- **Range**
  Allows you to specify the desired length as a range between two time positions.

- **Use Locators**

  Clicking the diamond-shaped button below the Range fields sets the Range values to the left and right Locator positions, respectively.

Time Stretch Ratio section

The Time Stretch Ratio determines the amount of time stretch as a percentage of the original length. If you use the settings in the Resulting Length section to specify the amount of time stretch, this value will change automatically.

Algorithm section

Here you can choose a preset for the realtime time stretch algorithm.

RELATED LINKS

Time stretch algorithm on page 279

Freeze Edits

The Freeze Edits function on the Audio menu allows you to make all processing and applied effects permanent for a clip:

PROCEDURE

1. Select the clip in the Pool or one of its events in the Project window.
2. Select "Freeze Edits…" from the Audio menu.
   - If there is only one edit version of the clip (no other clips refer to the same audio file), the following dialog will appear:
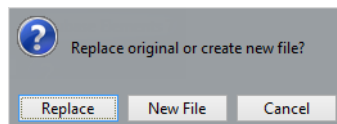
     If you select "Replace", all edits will be applied to the original audio file (the one listed in the clip's Path column in the Pool). If you select "New File", the Freeze Edits operation will create a new file in the Audio folder within the project folder (leaving the original audio file unaffected).
   - If the selected clip (or the clip played by the selected event) has several edit versions (i.e. there are other clips referring to the same audio file), the following alert will appear:
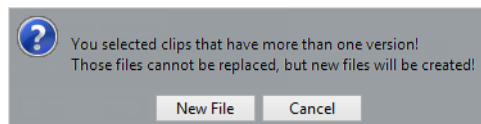
     As you can see, you do not have the option to Replace the original audio file in this case. This is because that audio file is used by other clips. Select "New File" to have a new file created in the Audio folder within the project folder.

NOTE

After a Freeze Edits, the clip refers to a new, single audio file.

Detect Silence

The Detect Silence function searches for silent sections in an event and either splits the event, removing the silent parts from the project, or creates regions corresponding to the non-silent sections.
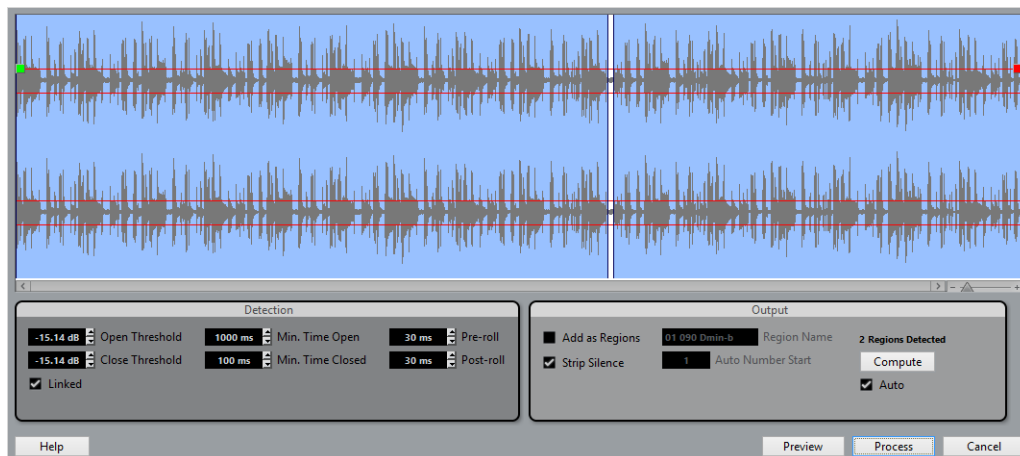
▪ To open the Detect Silence dialog, select one or several audio events in the Project window or the Audio Part Editor. On the Audio menu, open the Advanced submenu and select "Detect Silence".

If you select more than one event, the Detect Silence dialog allows you to process the selected events successively with individual settings or to apply the same settings to all selected events at once.

The settings have the following functionality:

Open Threshold

When the audio level exceeds this value, the function "opens", i.e. lets the sound pass. Audio material below the set level is detected as "silence". Set this value low enough to open when a sound starts, but high enough to remove unwanted noise during "silent" sections.

Close Threshold

When the audio level drops below this value, the function "closes", i.e. sounds below this level are detected as "silence". This value cannot be higher than the Open Threshold value. Set this value high enough to remove unwanted noise during "silent" sections.

Linked

If this checkbox is activated, the Open and Close Threshold values are always set to the same value.

Min. time open

Determines the minimum time that the function will remain "open" after the audio level has exceeded the Open Threshold value.

If the audio contains repeated short sounds, and you find that this results in too many short "open" sections, try raising this value.

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Min. time closed

Determines the minimum time that the function will remain "closed" after the audio level has dropped below the Close Threshold value.

Set this to a low value to avoid removing sounds.

Pre-roll

Allows you to cause the function to "open" slightly before the audio level exceeds the Open Threshold value. In other words, the start of each "open" section is moved to the left according to the time you set here.

This is useful to avoid removing the attack of sounds.

Post-roll

Allows you to cause the function to "close" slightly after the audio level drops below the Close Threshold value.

This is useful to avoid removing the natural decay of sounds.

Add as Regions

"Add as Regions" will create regions according to the non-silent sections.

If you activate the "Add as Regions" option, you can specify a name for the regions in the Region Name field. In addition to the name, the regions will be numbered, starting with the number specified in the "Auto Number Start" field.

Strip Silence

"Strip Silence" will split the event at the beginning and end of each non-silent section, and remove the silent sections in between.

Process all selected Events

If you have selected more than one event, you can activate the "Process all selected Events" checkbox to apply the same settings to all selected events.

Compute

The audio event is analyzed, and the waveform display is redrawn to indicate which sections are considered "silent" according to your settings. Above the Compute button, the number of detected regions is displayed.

Auto

If you activate the Auto checkbox next to the Compute button, the audio event is analyzed (and the display is updated) automatically every time you change the settings in the Detection section of the dialog. Deactivate this option when you are working with very long files, as this process might take some time.

Adjustments in the waveform display

The upper part of the dialog displays a waveform image of the selected audio event. In case you have selected several audio events, the waveform of the event that you have selected first is shown.

You can make the following adjustments:

- With the zoom slider below the waveform to the right, zoom in and out on the waveform.

  You can also click in the waveform, keep the mouse button pressed, and move the mouse for zooming. Move the mouse down to zoom in and move it up to zoom out.

- If you have zoomed in on the waveform, it may not be completely visible anymore. In this case, the scrollbar to the left of the zoom slider allows you to scroll through the waveform.

  You can also use the mouse wheel for scrolling through the waveform.

- If the Linked option in the Detection section is deactivated, you can use the green square at the beginning and the red square at the end of the audio file to graphically adjust the Open and Close Threshold values (respectively). When "Linked" is activated, you can use either square to adjust both values.

  The Open and Close Threshold values in the Detection section reflect these changes.

Making settings and processing

The lower part of the Detect Silence dialog provides settings for the detection and processing of "silent" sections.

PROCEDURE

1. Adjust the settings in the Detection section to the left.
2. Click the Compute button.

   The audio event is analyzed, and the waveform display is redrawn to indicate which sections are considered "silent" according to your settings. Above the Compute button, the number of detected regions is displayed.

3. Click "Preview" to listen to the result.

   The event is played back repeatedly in its entire length, but with the "closed" sections silenced.

4. Adjust the settings in the Detection section until you are satisfied with the result.

5. In the Output section, activate the "Add as Regions" or the "Strip Silence" option, or both.

6. Click the Process button.

   The event is split and/or regions are added.
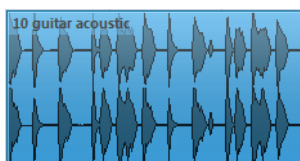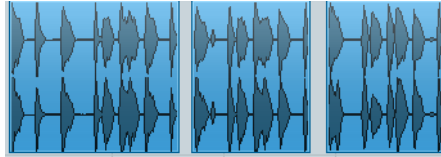
NOTE

If you have selected more than one event and did not activate the "Process all selected Events" option in the Output section, the dialog opens again after processing, allowing you to make separate settings for the next event.

The Spectrum Analyzer

This function analyzes the selected audio, computes the average "spectrum" (level distribution over the frequency range) and displays this as a two-dimensional graph, with frequency on the x-axis and level on the y-axis.

PROCEDURE

1. Make an audio selection (a clip, an event or a range selection).

2. Select "Spectrum Analyzer" from the Audio menu.

    A dialog with settings for the analysis appears.
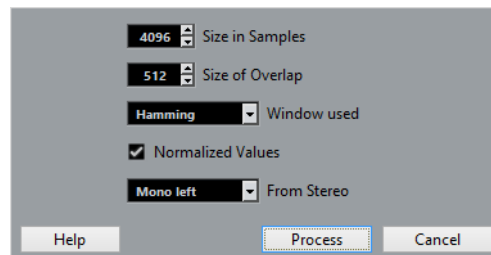
    The default values give good results in most situations, but you can adjust the settings if you like:

    - **Size in Samples**

      The function divides the audio into "analysis blocks", the size of which is set here. The larger this value, the higher the frequency resolution of the resulting spectrum.

    - **Size of Overlap**

      The overlap between each analysis block.

    - **Window used**

      Allows you to select which window type is used for the FFT (Fast Fourier Transform, the mathematical method used for computing the spectrum).

    - **Normalized Values**

      When this is activated, the resulting level values are scaled, so that the highest level is displayed as "1" (0 dB).

> ▪ **From Stereo**
>
> When analyzing stereo material, there is a pop-up menu with the following options:
> Mono mix – the stereo signal is mixed to mono before analyzing.
> Mono left/right – the left or right channel signal is used for analysis.
> Stereo – both channels are analyzed (two separate spectrums will be displayed).

3. Click the Process button.

The spectrum is computed and displayed as a graph.

4. You can adjust the display with the settings in the display window:

   ▪ **dB**

   When this is activated, the vertical axis shows dB values. When it is deactivated, values between 0 and 1 are shown.

   ▪ **Freq. log**
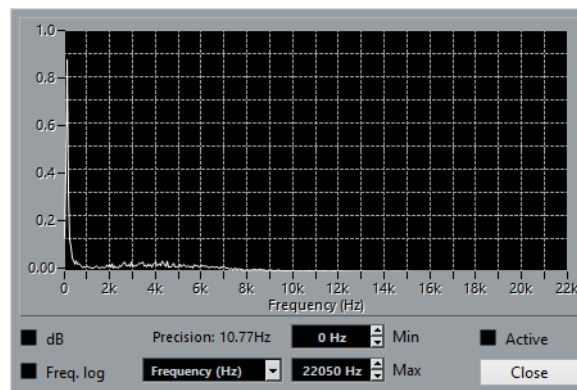
   When this is activated, frequencies (on the horizontal axis) are displayed on a logarithmic scale. When it is deactivated, the frequency axis is linear.

   ▪ **Precision**

   Indicates the frequency resolution of the graph. This value cannot be changed here, but is governed by the Size in Samples setting in the previous dialog.

   ▪ **Frequency/Note**

   Allows you to select whether you want the frequencies to be displayed in Hertz or with note names.

   ▪ **Min.**

   Sets the lowest frequency shown in the graph.

   ▪ **Max.**

   Sets the highest frequency shown in the graph. By adjusting the Min and Max values, you can take a closer look at a smaller frequency range.

   ▪ **Active**

   When this is activated, the next Spectrum Analysis will appear in the same window. When deactivated, new Spectrum Analysis results will appear in separate windows.

5. If you move the mouse pointer over the graph, a cross-hair cursor follows the graph curve and the display in the upper right corner shows the frequency/note and level at the current position.

   To compare the level between two frequencies, move the pointer to one of the frequencies, right-click once and move the pointer to the second frequency. The delta value (the difference in level between the current position and the right-click position) is displayed in the upper right corner (labeled "D").

- If you analyze stereo audio and selected the "Stereo" option in the first dialog, the graphs for the left and right channel are superimposed in the display, with the left channel graph in white and the right channel graph in yellow.

  The display in the upper right corner shows the values for the left channel – to see the right channel values, hold down [Shift]. An "L" or "R" is displayed to indicate which channel values are shown.

6. You can leave the window open or close it by clicking the "Close" button.

   If you leave it open and the "Active" checkbox is ticked, the result of the next Spectrum Analysis will be displayed in the same window.

Statistics

Channel	**Middle**
Min. Sample Value	-0.00 dB
Max. Sample Value	-0.13 dB
Peak Amplitude	-0.00 dB
True Peak	0.01 dB
DC Offset	0.02 %
	-95.58 dB
Resolution	16 Bit
Estimated Pitch	1115.1Hz/C#5
Sample Rate	44.100 kHz
Average RMS (AES-17)	-12.26 dB
Max. RMS	-11.02 dB
Max. RMS All Channels	-11.02 dB

Help	Copy to Clipboard	Close

The Statistics function on the Audio menu analyzes the selected audio (events, clips, or range selections) and displays a window with the following information:

Channel

The name of the analyzed channel.

Min. Sample Value

The lowest sample value in dB.

Max. Sample Value

The highest sample value in dB.

Peak Amplitude

The largest amplitude in dB.

True Peak

The maximum absolute level of the audio signal waveform in the continuous time domain.

DC Offset

The amount of DC Offset as a percentage and in dB.

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Resolution

The current calculated audio resolution.

Estimated Pitch

The estimated pitch.

Sample Rate

The sample rate.

Average RMS (AES-17)

The average loudness in accordance with the AES-17 standard.

Max. RMS

The highest RMS value.

Max. RMS All Channels

The highest RMS value of all channels.

RELATED LINKS

Time stretch algorithm

Standard

The Standard algorithm is optimized for CPU efficient realtime processing.

The following presets are available:

Standard – Drums

This mode is best for percussive sounds, because it does not change the timing of your audio. Using this option with certain tuned percussion instruments may lead to audible artifacts. In this case, try the Mix mode as an alternative.

Standard – Plucked

Use this mode for audio with transients and a relatively stable spectral sound character (e.g. plucked instruments).

Standard – Pads

Use this mode 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

This mode is suitable for slower signals with transients and a prominent tonal character (e.g. vocals).

Standard – Mix

This mode preserves the rhythm and minimizes the artifacts for pitched material that does not meet the above criteria (i.e. with a less homogenous sound character).

This preset is selected by default for audio that is not categorized.

Standard – Custom

This preset allows you to manually tweak the time stretching parameters (see below). By default, the settings that are shown when you open the dialog are those of the last preset used (except if the Solo preset has been selected, see below).

Standard – Solo

This mode preserves the timbre of the audio. Only use it for monophonic material (solo woodwind/brass instruments or solo vocals, monophonic synths or string instruments that do not play harmonies).

If you select the "Standard – Custom" option, a dialog opens where you can manually adjust the three parameters that govern the sound quality of the time stretching:

Grain size

The standard time-stretching algorithm splits the audio into small pieces called "grains". This parameter determines the size of the grains. For material with many transients, use low grain size values for best results.

Overlap

Overlap is the percentage of the whole grain that will overlap with other grains. Use higher values for material with a stable sound character.

Variance

Variance is also a percentage of the whole length of the grains, and sets a variation in positioning so that the overlapping area sounds smooth. A Variance setting of 0 will produce a sound akin to time stretching used in early samplers, whereas higher settings produce more (rhythmic) "smearing" effects but less audio artifacts.

Sample Editor

Window overview

The Sample Editor allows you to view and manipulate audio by cutting and pasting, removing, or drawing audio data, and by processing audio. This editing is "non-destructive": The actual file will remain untouched so that you can undo modifications or revert to the original settings at any time.
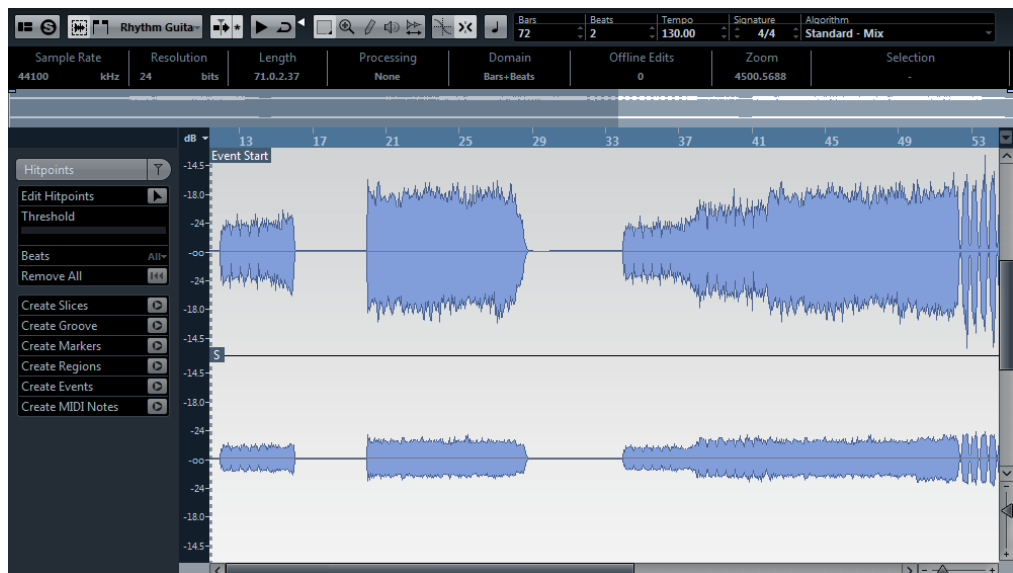
The Sample Editor also contains most of the realtime time stretching functions in Cubase. These can be used to match the tempo of audio to the project tempo.

Another special feature of the Sample Editor is hitpoint detection. Hitpoints allow you to create audio slices, which can be useful in many situations, for example, if you want to change the tempo without introducing artifacts.

NOTE

The term "loop" is used throughout this chapter and in this context usually means an audio file with a musical time base. That means that the length of the loop represents a certain number of bars and beats at a certain tempo. Playing the loop back at the right tempo in a cycle set to the correct length will produce a continuous loop without gaps.

RELATED LINKS

Opening the Sample Editor

To open the Sample Editor, double-click an audio event in the Project window or the Audio Part Editor, or double-click an audio clip in the Pool. You can have more than one Sample Editor window open at the same time.

NOTE

Double-clicking an audio part in the Project window opens the Audio Part Editor, even if the part contains a single audio event only.

RELATED LINKS

The toolbar

The toolbar contains various tools for selecting, manipulating and playing back audio, as well as options that affect the appearance and behavior of the Sample Editor.

In the Musical Information section at the right of the toolbar, the estimated length of your audio file is displayed in bars and beats (PPQ) together with the estimated tempo and the time signature. These values are important for using Musical Mode.

Bars	Beats	Tempo	Signature	Algorithm
43	2	120.00	4/4	élastique Pro - Time

The Algorithm pop-up menu allows you to select an algorithm for the realtime time stretching.

- You can customize the toolbar by right-clicking it and using the context menu to hide or show items.

Show Audio Event

When the "Show Audio Event" button is activated on the toolbar, the section corresponding to the edited event is highlighted in the waveform display and the Overview. The sections of the audio clip not belonging to the event are shown with a gray background.

- You can adjust the start and end of the event in the clip by dragging the event handles in the waveform display.

IMPORTANT

This button is only available if you have opened the Sample Editor by double-clicking an audio event in the Project window or the Audio Part Editor. It is not available if you have opened the audio event from the Pool.

Snap

The Snap function helps you to find exact positions when editing in the Sample Editor by restricting horizontal movement and positioning to certain grid positions. You turn Snap on or off by clicking the Snap button in the Sample Editor toolbar.

NOTE

The Sample Editor Snap function is independent of the Snap setting in the Project window toolbar or other editors. It has no effect outside the Sample Editor.

Snap to Zero Crossing

When this option is activated, editing is done at zero crossings (positions in the audio where the amplitude is zero). This helps you to avoid pops and clicks, which might otherwise be caused by sudden amplitude changes.

NOTE

The Sample Editor function "Snap to Zero Crossing" is independent of the same setting in the Project window toolbar or other editors. It has no effect outside the Sample Editor.

Auto-Scroll

When the Auto-Scroll option is activated on the Sample Editor toolbar, the waveform display will scroll during playback, keeping the project cursor visible in the editor.

NOTE

This setting is independent of the Auto-Scroll setting in the Project window toolbar or other editors.

RELATED LINKS

The info line

The info line is displayed below the toolbar. It shows information about the audio clip, such as the audio format and the selection range.

Sample Rate		Resolution		Length	Processing	Domain	Offline Edits	Zoom	Selection
44100	kHz	24	bits	77.0.0.79	None	Bars+Beats	0	1925.2096	At: 79.1.1.5

Initially, length and position values are displayed in the format specified in the Project Setup dialog.

▪ To show or hide the info line, click the "Set up Window Layout" button on the toolbar and activate or deactivate the Info Line option.

The Sample Editor Inspector

On the left in the Sample Editor, you will find the Sample Editor Inspector. It contains tools and functions for working in the Sample Editor.

The Hitpoints tab

On this tab, hitpoints can be marked and edited. Hitpoints allow you to slice your audio and to create groove quantize maps from your audio. You can also create markers, regions, and events based on hitpoints.

The overview line

The overview line displays the whole clip.
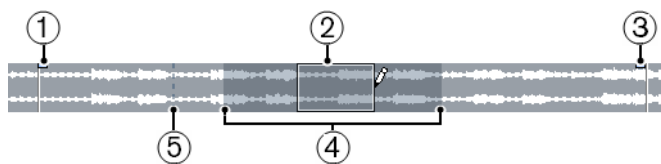
1) Event Start

2) Selection

3) Event End

4) Viewing area

5) Snap Point

The section currently shown in the main waveform display of the Sample Editor (the viewing area) is indicated by a rectangle in the overview line, and the current selection range is also shown. If the "Show Audio Event" button is activated on the toolbar, event start/end and snap point are shown in the overview line.

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- To view other sections of the clip, move the viewing area in the overview line. Click in the lower half of the viewing area and drag to the left or right to move it.
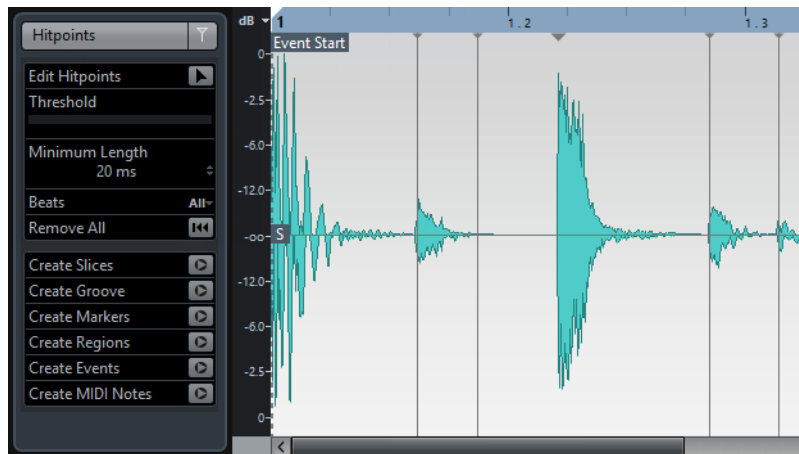
- To zoom in or out, horizontally, resize the viewing area by dragging its left or right edge.

- To define a new viewing area, click in the upper half of the Overview and drag a rectangle.

The ruler

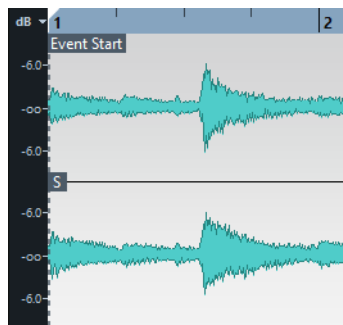The Sample Editor ruler is located between the overview line and the waveform display.
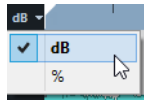

RELATED LINKS
Ruler on page 29

The waveform display and the level scale

The waveform display shows the waveform image of the edited audio clip according to the wave image style set in the Preferences dialog (Event Display–Audio page).

To the left of the waveform display a level scale is shown, indicating the amplitude of the audio.

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- You can select whether the level is shown as a percentage or in dB.

  This is done by opening the level scale pop-up menu at the top of the level scale and selecting an option.

- Cubase Elements only: Select the "Show Half Level Axis" option on the context menu of the waveform display, if you want the half level axes to be shown.

Half-level axis
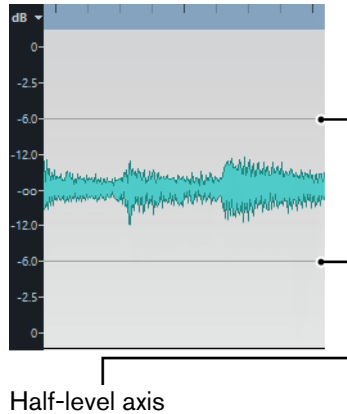
RELATED LINKS

General Functions

Zooming

Zooming in the Sample Editor is done according to the standard zoom procedures, with the following special notes to keep in mind:

- The vertical zoom slider changes the vertical scale relative to the height of the editor window, in a way similar to the waveform zooming in the Project window.

- The vertical zoom will also be affected if the "Zoom Tool Standard Mode: Horizontal Zooming Only" preference (Editing–Tools page) is deactivated and you drag a rectangle with the Zoom tool.

The following options relevant to the Sample Editor are available on the Zoom submenu of the Edit menu or the context menu:

Zoom In

Zooms in one step, centering on the position cursor.

Zoom Out

Zooms out one step, centering on the position cursor.

Zoom Full

Zooms out so that the whole clip is visible in the editor.

Zoom to Selection

Zooms in so that the current selection fills the editor display.

Zoom to Selection (Horiz.)

Zooms in horizontally so that the current selection fills the editor display.

Zoom to Event

Zooms in so that the editor 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 (in which case the whole clip is opened for editing, not an event).

Zoom In/Out Vertically

This is the same as using the vertical zoom slider (see above).

Undo/Redo Zoom

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

• The current zoom setting is shown in the info line, as a "samples per screen pixel" value.

NOTE

You can zoom in horizontally to a scale of less than one sample per pixel! This is required for drawing with the Draw tool.

• If you have zoomed in to one sample per pixel or less, the appearance of the samples depends on the "Interpolate Audio Images" option in the Preferences dialog (Event Display–Audio page).

If the option is deactivated, single sample values are drawn as "steps". If the option is activated, they are interpolated to a "curve" form.

RELATED LINKS

Auditioning

While you can use the regular play commands to play back audio when the Sample Editor is open, it is often useful to listen to the edited material only.

Clicking the Audition icon on the toolbar plays back the edited audio, according to the following rules:

• If you have made a selection, this selection will be played back.

- If there is no selection and "Show Event" is deactivated, playback will start at the cursor position.

- If the Audition Loop icon is activated, playback will continue repeatedly until you deactivate the Audition Loop icon. Otherwise, the section will be played back once.

NOTE

There is a separate Play button for auditioning regions.

Using the Speaker tool

If you click somewhere in the waveform display with the Speaker ("Play") tool and keep the mouse button pressed, the clip is played back from the position where you click. Playback will continue until you release the mouse button.

Using key commands

If you activate the "Playback Toggle triggers Local Preview" option in the Preferences dialog (Transport page), you can start/stop auditioning by pressing [Space]. This is the same as clicking the Audition icon on the toolbar.

The Sample Editor also supports the "Preview start" and "Preview stop" key commands in the Media category of the Key Commands dialog. These key commands stop the current playback, whether you are in normal playback or in audition mode.

RELATED LINKS

Scrubbing

The Scrub tool allows you to locate positions in the audio by playing back, forwards, or backwards, at any speed:

PROCEDURE

1. Select the Scrub tool.

2. Click in the waveform display and keep the mouse button pressed.
   The project cursor is moved to the position where you clicked.

3. Drag to the left or right.
   The audio is played back. The speed and pitch of the playback depend on how fast you drag.

Adjusting the snap point

The snap point is a marker within an audio event. It is used as a reference position when you move events with snap activated, so that the snap point is "magnetic" to whatever snap positions you have selected.

By default, the snap point is set at the beginning of the audio event, but often it is useful to move the snap point to a "relevant" position in the event, such as a downbeat.

NOTE

- If you adjust the snap point with the Scrub tool, the audio is played back.

- Cubase Elements only: You can also adjust the snap point by setting the project cursor at the desired position and selecting "Snap Point To Cursor" on the Audio menu.

  The snap point will be set to the position of the cursor. This method can also be used in the Project window and the Audio Part Editor.

- It is also possible to define a snap point for a clip (for which there is no event yet).

To open a clip in the Sample Editor, double-click it in the Pool. After having set the snap point, you can insert the clip into the project from the Pool or the Sample Editor with the set snap point position.

IMPORTANT

Events and clips can have different snap points. If you open a clip from the Pool, you can edit the clip snap point. If you open a clip from within the project window, you can edit the event snap point. 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.

To adjust the snap point, proceed as follows:

PROCEDURE

1. Activate the "Show Audio Event" option on the toolbar, so that the event is displayed in the editor.

2. If needed, scroll until the event is visible, and locate the "S" flag in the event.

   If you have not adjusted this previously, it is located at the beginning of the event.

3. Click on the "S" flag and drag it to the desired position.
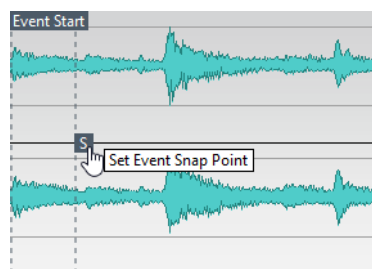
Drawing in the Sample Editor

It is possible to edit the audio clip at sample level by drawing with the Draw tool. This can be useful if you need to manually edit out a spike or click, etc.

PROCEDURE

1. Zoom in to a zoom value lower than 1.

    This means that there is more than one screen pixel per sample.

2. Select the Draw tool.

3. Click at the beginning of the section that you want to correct and draw in the new curve.

    A range selection covering the edited section is automatically applied.

Making selections

To select an audio section in the Sample Editor, click and drag with the Range Selection tool.
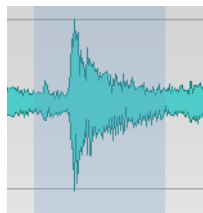
A selected range

- If "Snap to Zero Crossing" is activated on the toolbar, the selection's start and end are always at zero crossings.

- You can resize the selection by dragging its left and right edge or by [Shift]-clicking.

Using the Select menu

On the Select submenu of the Edit menu you find the following options:

All

Selects the whole clip.

None

Selects no audio (the selection length is set to "0").

In Loop

Selects all audio between the left and right locator.

Select Event

Selects only the audio that is included in the edited event. This is grayed out if you have opened the Sample Editor from the Pool (in which case the whole clip is opened for editing, not an event).

From Start to Cursor

Selects all audio between the clip start and the project cursor.

From Cursor to End

Selects all audio between the project cursor and the end of the clip. For this to work, the project cursor must be within the clip boundaries.

Left Selection Side to Cursor

Moves the left side of the current selection range to the project cursor position. For this to work, the cursor must be within the clip boundaries.

Right Selection Side to Cursor

Moves the right side of the current selection range to the project cursor position (or the end of the clip, if the cursor is to the right of the clip).

NOTE

Several of these options are also available on the Sample Editor context menu.

Editing selection ranges

Selections in the Sample Editor can be processed in several ways.

If you attempt to edit an event that is a shared copy (i.e. the event refers to a clip that is used by other events in the project), you are asked whether you want to create a new version of the clip.

- Select "New Version" if you want the editing to affect the selected event only. Select "Continue" if you want the editing to affect all shared copies.

  NOTE

  If you activate the "Please, don't ask again" option in the dialog, any further editing will conform to the selected method ("Continue" or "New Version"). You can change this setting at any time with the "On Processing Shared Clips" pop-up menu in the Preferences dialog (Editing–Audio page).

Cut, Copy, and Paste

The Cut, Copy, and Paste commands (on the Edit menu in the Sample Editor context menu or on the main Edit menu) work according to the following rules:

- Selecting Copy copies the selection to the clipboard.

- Selecting Cut removes the selection from the clip and moves it to the clipboard.
  The section to the right of the selection is moved to the left to fill the gap.

- Selecting Paste copies the data from the clipboard into the clip.

  If there is a selection in the editor, this is replaced by the pasted data. If there is no selection, the pasted data is inserted starting at the project cursor. The section to the right of the line is moved to make room for the pasted material.

Delete

Selecting Delete (on the Edit menu in the Sample Editor context menu or on the main Edit menu) removes the selection from the clip. The section to the right of the selection is moved to the left to fill the gap.

Insert Silence

Selecting "Insert Silence" (on the Range submenu of the main Edit menu) inserts a silent section with the same length as the current selection, at the selection start.

- The selection is not replaced, but moved to the right to make room.

  If you want to replace the selection, use the "Silence" function instead.

Processing

The Processing features (on the Process submenu of the Audio menu) can be applied to selections in the Sample Editor.

RELATED LINKS
Silence on page 270
Audio processing and functions on page 262

Creating a new event from the selection using drag & drop

You can create a new event that plays only the selected range.

PROCEDURE

1. Make a selection range.

2. Drag the selection range to an audio track in the Project window.

Creating a new clip or audio file from the selection

You can extract a selection from an event and either create a new clip or a new audio file.

1. Make a selection range.
2. Open the context menu and select "Bounce Selection" from the Audio submenu.

A new clip is created and added to the Pool, and another Sample Editor window opens with the new clip. This clip refers to the same audio file as the original clip, but contains the audio corresponding to the selection range only.

Working with regions

Regions are sections within a clip. One of the main uses for regions is Cycle recording, in which the different "takes" are stored as regions.

You can also use this feature for marking important sections in the audio clip. Regions can be dragged into the Project window from the Sample Editor or the Pool to create new audio events.
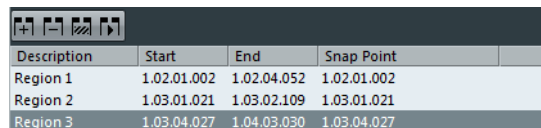
RELATED LINKS
Cycle Recording on page 147

Creating and removing regions

1. Select the range that you want to convert into a region.
2. Click the "Set up Window Layout" button and activate the Regions option.
    The regions list is displayed on the right.

Description	Start	End	Snap Point	
Region 1	1.02.01.002	1.02.04.052	1.02.01.002	
Region 2	1.03.01.021	1.03.02.109	1.03.01.021	
Region 3	1.03.04.027	1.04.03.030	1.03.04.027	

3. Click the Add Region button above the regions list (or select "Event or Range as Region" from the Advanced submenu of the Audio menu).
    A region is created, corresponding to the selected range.
4. To name the region, double-click on it in the list and enter a new name.
    Using this procedure, regions can be renamed at any time.

When you click on a region in the regions list, it is instantly displayed in the Sample Editor.

To remove a region from a clip, select it in the list and click the Remove Region button above the list.
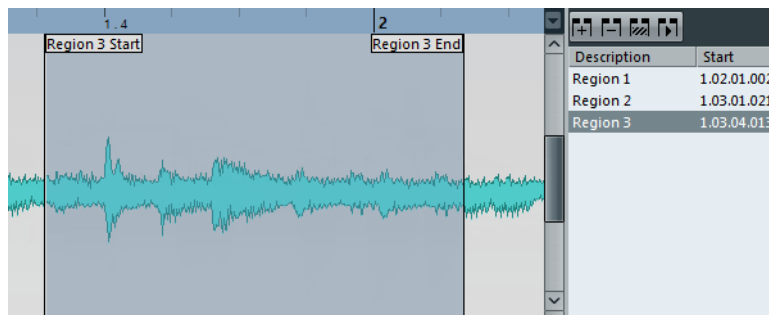
Creating regions from hitpoints

If your audio event contains calculated hitpoints, you can choose to automatically create regions from hitpoints. This can be useful to isolate recorded sounds.

RELATED LINKS

Editing regions

The region selected in the list is displayed in gray in the waveform display and the overview line.

There are two ways to edit the start and end positions of a region:

- Click and drag the region start and end handles in the waveform display (with any tool).

  When you move the pointer over the handles, it automatically changes to indicate that you can drag the handles.

- Edit the Start and End positions in the corresponding fields in the regions list.

  The positions are shown in the display format selected for the ruler and info line, but are relative to the start of the audio clip rather than the project timeline.

Auditioning regions

You can listen to a region by selecting it in the list and clicking the Play Region button above the list. The region will play back once or repeatedly, depending on whether the Loop icon on the toolbar is activated or not.

You can also listen to a region by selecting it in the list and clicking the Audition icon on the toolbar. This way you can preview separate regions by clicking on them in the list or by selecting them with the up/down arrow keys on your computer keyboard.

Making selections from regions

If you select a region in the list and click the Select Region 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.

NOTE

You can also double-click a region in the Pool to have its audio clip opened in the Sample Editor with the area of the region automatically selected.

Creating audio events from regions

You can create new audio events from regions using drag & drop.

PROCEDURE

1.   In the list, click on the region and keep the mouse button pressed.

2.   Drag the region to the desired position in the project and release the mouse button.

RESULT

A new event is created.

You can also use the "Events from Regions" function from the Advanced submenu of the Audio menu.

RELATED LINKS
    Region Operations on page 123

Exporting regions as audio files

If you create a region in the Sample Editor, the region can be exported to disk as a new audio file. This is done from the Pool.
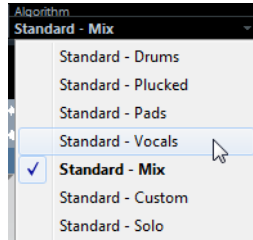
RELATED LINKS
    Exporting Regions as Audio Files on page 329

Selecting an algorithm for realtime playback

On the Algorithm pop-up menu on the toolbar you can select the algorithm preset to be applied during realtime playback.

This setting affects warp changes in Musical Mode.

The pop-up menu contains various options that govern the audio quality of the realtime time stretching. There are presets for common uses and a Custom option that allows you to manually set warp parameters.

RELATED LINKS

Musical Mode

You can use the Musical Mode to tempo-match audio loops to the project tempo. Musical Mode allows you to lock audio clips to the project tempo by using realtime time stretching. This is very useful if you want to use audio in your project without worrying too much about timing.

If you want to use Musical Mode, verify that the length in bars corresponds to the audio file you imported. If necessary, listen to your audio and enter the correct length in bars and beats.

When Musical Mode is activated, audio events will adapt to any tempo changes in Cubase, just like MIDI events.

You can activate Musical Mode ♩ on the toolbar.

NOTE

It is also possible to activate/deactivate Musical Mode from within the Pool by clicking the corresponding checkbox in the Musical Mode column.

IMPORTANT

Cubase supports ACID® loops. These loops are standard audio files but with embedded tempo/length information. When ACID® files are imported into Cubase, Musical Mode is automatically activated and the loops will adapt to the project tempo.

Warping audio

Warping is a term used to describe the realtime time stretching of a selected section of audio. Warping is generally used to correct the tempo or timing of audio.
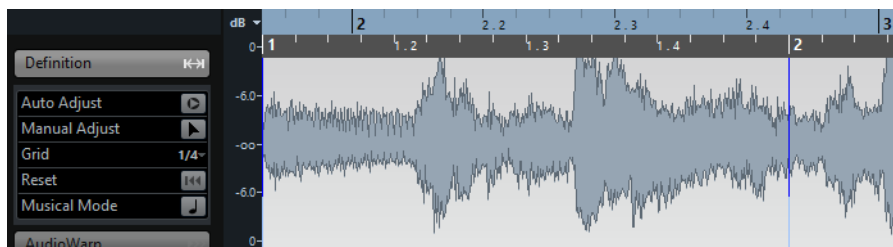
Adjusting loops to the project tempo using Musical Mode

Audio loops are normally short audio files containing a defined number of bars with straight beats. These loops can be adjusted to the project tempo by using the Musical Mode function.

PROCEDURE

1. Import an audio loop into a project and double-click it to open the Sample Editor.

2. From the Algorithm pop-up menu on the toolbar, select the algorithm preset to be applied during realtime playback.

3. Listen to the loop and, if necessary, correct the Bars and Beats values on the toolbar.

4. Activate the Musical Mode button.

   Your loop is warped and stretched automatically to adapt it to the project tempo.

RESULT

In the Project window, the audio event is now shown with a note symbol and a warp symbol in the upper right corner to indicate that time stretching has been applied.

RELATED LINKS

Time stretch algorithm on page 279

Working with hitpoints and slices

Cubase can detect hitpoints, musically relevant positions, by analyzing onsets and melodic changes. At these positions a type of marker is added. Hitpoints allow you to create slices, where each slice ideally represents each individual sound or "beat". Drum or other rhythmic recordings or loops work best with this feature.

Purpose and preparation

Hitpoints are useful to slice up audio to make it fit the project tempo or to create a situation that allows the song tempo to be changed while retaining the timing of a rhythmic audio loop.

When you have successfully detected the hitpoints for an audio file, you can do a number of useful things:

- Change the tempo of the audio material without affecting the pitch and audio quality.

- Use slices to replace individual sounds in a drum loop.

- Extract sounds from loops.

You can further edit these slices in the Audio Part Editor. You can, for example:

- Remove or mute slices.

- Change the loop by reordering or replacing slices.

- Apply processing to individual slices.

- Create new files from individual slices using the "Bounce Selection" function on the Audio menu.

- Edit slice envelopes.

Hitpoints can also be used to quantize audio material without creating slices.

RELATED LINKS
Quantizing MIDI and Audio on page 166

Which audio files can be used?

Here are some guidelines as to what type of audio files are suited for slicing using hitpoints:

- Each individual sound should have a noticeable attack.
  Slow attacks, legato playing, etc. may not produce the expected result.

- Poorly recorded audio might be difficult to slice correctly.
  In these cases, try to normalize the files or to remove DC Offset.

- The recorded audio should contain as little crosstalk signals as possible.
  Crosstalk refers to the "bleeding" of a sound into a microphone placed before another instrument during recording.

- There may be problems with sounds drowned in smearing effects, like short delays.

Automatic Hitpoint Detection

When you add an audio file to your project by recording or by importing, Cubase automatically detects hitpoints. This allows you to navigate to hitpoints of an audio file from within the **Project** window.

For long audio files, hitpoint detection may take a while. All operations that are based on hitpoints are disabled during the calculation.

- To disable automatic hitpoint detection, select **File > Preferences > Editing > Audio** and deactivate **Enable Automatic Hitpoint Detection**.

- In the **Project** window, hitpoints are shown for the selected event, provided that the zoom factor is high enough.

  To hide them, select **File > Preferences > Event Display > Audio** and disable **Show Hitpoints on Selected Events**.

Filtering hitpoints

You can filter hitpoints in the **Hitpoints** Inspector tab of the **Sample Editor**.
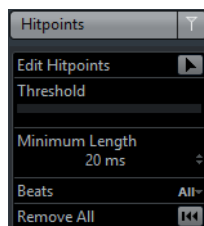
You can use the following parameters to filter hitpoints:

Threshold

This filters hitpoints by their peaks. This allows you to discard hitpoints of quieter crosstalk signals, for example.

Minimum Length

This filters hitpoints by the distance between two hitpoints. This allows you to avoid creating slices that are too short.

Beats

This allows you to filter hitpoints by their musical position. This allows you to discard hitpoints that do not fit within a certain range of a defined beat value.

Using Hitpoints to Locate Audio Positions in the Project Window

You can navigate through the hitpoints of an audio event in the **Project** window.

PREREQUISITE

Enable Automatic Hitpoint Detection is activated (**File > Preferences > Editing > Audio**).

PROCEDURE

1. Select the audio track that contains the audio event for which you want to locate hitpoints.
2. Press [Alt]/[Option]-[N] to navigate to the next hitpoint, or [Alt]/[Option]-[B] to navigate to the previous hitpoint.

RESULT

The project cursor jumps to the respective hitpoint.

Auditioning and hitpoints

- You can audition the hitpoint slices, that is the area between two hitpoints, by pointing and clicking in any slice area.

    The pointer changes to a speaker icon and the corresponding slice is played back from the beginning to the end.

Navigating between hitpoints

- You can navigate between the slices using the arrow keys or by pressing the [Tab] key.

- You can select the next or previous hitpoint marker using the "Locate Next/Previous Hitpoint" commands.

    The default key commands for this are [Alt]/[Option]-[N] and [Alt]/[Option]-[B].

Editing hitpoints

You can change the state of a hitpoint, insert new hitpoints manually, and move existing hitpoints.

Hitpoints can have three different states: enabled, locked, and disabled. "Enabled" is the normal state a hitpoint has immediately after the detection. Hitpoints can be "disabled" so that they are still visible as gray triangles on the timeline, but will not be taken into account for further operations. "Locking" hitpoints is an easy way to make sure that hitpoints are not accidentally filtered out. Locked hitpoints are not affected by the Threshold slider and Beats pop-up menu.
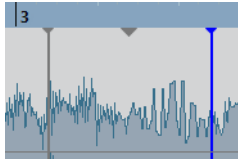
An enabled, a disabled, and a locked hitpoint

Disabling and locking hitpoints

After applying the different hitpoint filters, you may find that you want to keep individual hitpoints that were filtered out or disable hitpoints that you do not need. Furthermore, you may want to lock certain hitpoints.

- To lock a hitpoint, move the mouse pointer over the gray triangle on the timeline so that the tooltip "Lock Hitpoint" is shown. Click on the triangle.

  This way, enabled and disabled hitpoints can be locked.

- To lock a disabled hitpoint, you can also press [Alt]/[Option] and move the mouse over the waveform. At positions where a disabled hitpoint can be locked, a gray hitpoint line and the tooltip "Lock Hitpoint" are shown. Click to lock the hitpoint.

- To lock multiple hitpoints, press [Shift]-[Alt]/[Option] so that the tooltip "Lock multiple hitpoints" is shown and drag a rectangle over the hitpoints.

  All enabled and disabled hitpoints within the area defined by the rectangle become locked.

- To disable hitpoints, press [Shift] so that the tooltip "Disable Hitpoints" is shown and click on the line of a single hitpoint or drag a rectangle over all the hitpoints that you want to disable.

  This way, enabled and locked hitpoints can be disabled.

- To disable a locked hitpoint, you can also point the mouse at the blue hitpoint triangle on the timeline so that the tooltip "Disable Hitpoint" is shown. Click on the triangle.

Resetting hitpoints

Sometimes it can be useful to reset hitpoints to their original state, e.g. because you still want them to be affected by the Threshold slider.

PROCEDURE

▪ To reset hitpoints to their original state, press [Ctrl]/[Command]-[Alt]/[Option] so that the tooltip "Enable/Unlock Hitpoints" is shown and drag a rectangle over the hitpoints.

RESULT

All disabled and locked hitpoints within the area defined by the rectangle are reset. Note that some of the hitpoints may still appear as disabled due to the Threshold slider and Beats pop-up menu settings.

Inserting hitpoints

If you get too few hitpoints using the filter options, you can insert hitpoints manually.

PROCEDURE

▪ To insert a new hitpoint, press [Alt]/[Option] and click at the position where you want to enter the new hitpoint (i.e. at the start of the sound).
Manually added hitpoints are locked by default.

Moving hitpoints

If a hitpoint was either placed too far away from the start of the sound or too far into the sound, you can move it.

PROCEDURE

▪ To move a hitpoint, press [Alt]/[Option] and point the mouse at the vertical line of the hitpoint.

RESULT

The mouse pointer changes to a double arrow and the tooltip "Move Hitpoint" is shown. You can now drag the hitpoint to its new position.

NOTE

Moved hitpoints are locked by default.

Slicing audio

Once you have set up the hitpoints as needed, you can slice the audio by clicking the Create Slices button on the Hitpoints tab. Alternatively, you can select the "Create Audio Slices from Hitpoints" command from the Hitpoints submenu of the Audio menu.

The following happens:

- The Sample Editor closes.

- The audio event is "sliced" so that the sections between the hitpoints become separate events, all referring to the same original file.

- The audio event is replaced by an audio part, containing the slices (double-click the part to view the slices in the Audio Part Editor).

IMPORTANT

When you create slices, all events referring to the edited clip are also replaced.

- The audio is automatically adapted to the project tempo, taking the specified tempo or bars and beats values into account: if the event was one bar long, the part is resized to fit exactly one bar in the Cubase tempo, and the slices are moved accordingly, keeping their relative positions within the part.

- In the Pool, the sliced clip is shown with a different icon. Dragging the sliced clip from the Pool to an audio track creates an audio part with the slices adapted to the project tempo, just as above.

The audio should now play back seamlessly at the tempo set in the project!

Slices and the project tempo

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. To remedy this, you can apply the "Close Gaps (Timestretch)" function from the Advanced submenu of the Audio menu on the parts containing the slice events. Time stretch is applied to each slice to close the gaps. Depending on the length of the part and the algorithm set in the Preferences dialog (Editing–Audio page), this can take a while.

NOTE

If you open the Pool, you will see that new clips were created, one for each slice.

If you decide to change the tempo again after using the "Close Gaps (Timestretch)" function, undo the Close Gaps operation or start over again, using the original, unstretched file.

Also consider activating auto fades for the corresponding audio track – fade-outs set to about 10 ms will help eliminate any clicks between the slices when you play back the part.

If the project tempo is higher than the tempo of the original audio event, the slice events are overlapping. Activate auto crossfades for the track to smooth out the sound. Furthermore, you can select the overlapping events inside the part and apply the "Delete Overlaps" function from the Advanced submenu of the Audio menu.
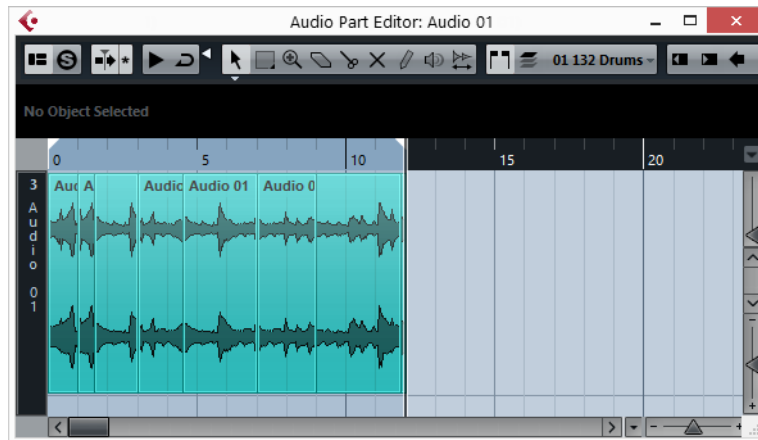
The slices in the Audio Part Editor. Here, the project tempo was higher than the clip's original tempo – the slice events overlap.

RELATED LINKS
Making global Auto Fade settings on page 182
Making Auto Fade settings for individual tracks on page 183

Other hitpoint functions

On the Hitpoints tab of the Sample Editor Inspector, you will also find the following functions. Many of these functions are also available on the Hitpoints submenu of the Audio menu. If selected on the Audio menu, they can be applied on several events and even range selections at the same time.

Create Groove

You can generate a groove quantize map based on hitpoints that you have created.

RELATED LINKS
Creating Groove Quantize Presets on page 172

Create Markers

If an audio event contains calculated hitpoints, you can click the Create Markers button on the Hitpoints tab to add a marker for each hitpoint. If your project has no marker track, it will be added and activated automatically. Markers can be useful to snap to hitpoints, e.g. for locating hitpoints.

RELATED LINKS
Markers on page 196

Create Regions

If your audio event contains calculated hitpoints, you can click the Create Regions button on the Hitpoints tab to automatically create regions from hitpoints. This can be useful to isolate recorded sounds.

Create Events

If your audio event contains calculated hitpoints, you can click the Create Events button on the Hitpoints tab to automatically create separate events based on the hitpoints.

Create MIDI Notes

You can export your hitpoints to a MIDI part containing a MIDI note for each hitpoint. For example, you can use this function to double, replace, or enrich drum hits by triggering sounds of a VST instrument at the positions of the hitpoints.

To convert the hitpoints into MIDI notes, click the "Create MIDI Notes" button. Make the desired settings in the Convert Hitpoints to MIDI Notes dialog and click OK.
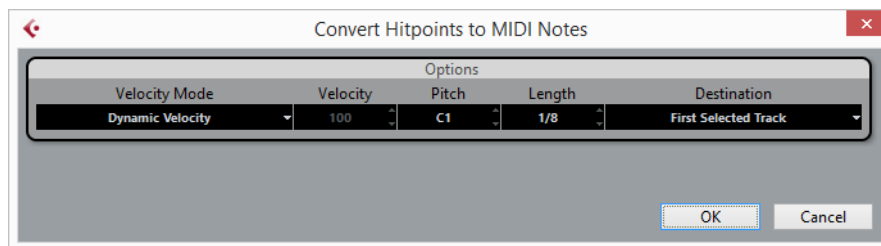
The following options are available:

Velocity Mode/Velocity

- Dynamic Velocity Value – The velocity values of the created MIDI notes vary, according to the peak levels of the corresponding hitpoints.

- Fixed Velocity Value – The created MIDI notes get the same velocity value. You can set this value using the Velocity field.

Pitch/Length

- Hitpoints do not contain any information about pitch or duration. Therefore, all created MIDI notes get the same pitch and note length. Use these fields to specify the desired values.

Destination

- First Selected Track – The MIDI part is placed on the first selected MIDI or instrument track. Note that any MIDI parts from previous conversions that are on this track will be deleted.

- New MIDI Track – A new MIDI track is created for the MIDI part.

- Project Clipboard – The MIDI part is copied into the clipboard so that you can insert it at the desired position on a MIDI or instrument track.

Audio Part Editor

The Audio Part Editor allows you to view and edit the events inside audio parts. Essentially, this is the same type of editing that you do in the Project window.

Audio parts are created in the Project window in one of the following ways:

- Select one or several audio events on the same track, and select **Audio > Events to Part**.

- Glue together two or more audio events on the same track with the Glue tool.

- Draw an empty part with the Draw tool.

- Double-click between the left and right locators on an audio track.

With the last two methods, an empty part is created. You can then add events to the part by pasting, or by using drag and drop from the Pool.

RELATED LINKS

Window Overview
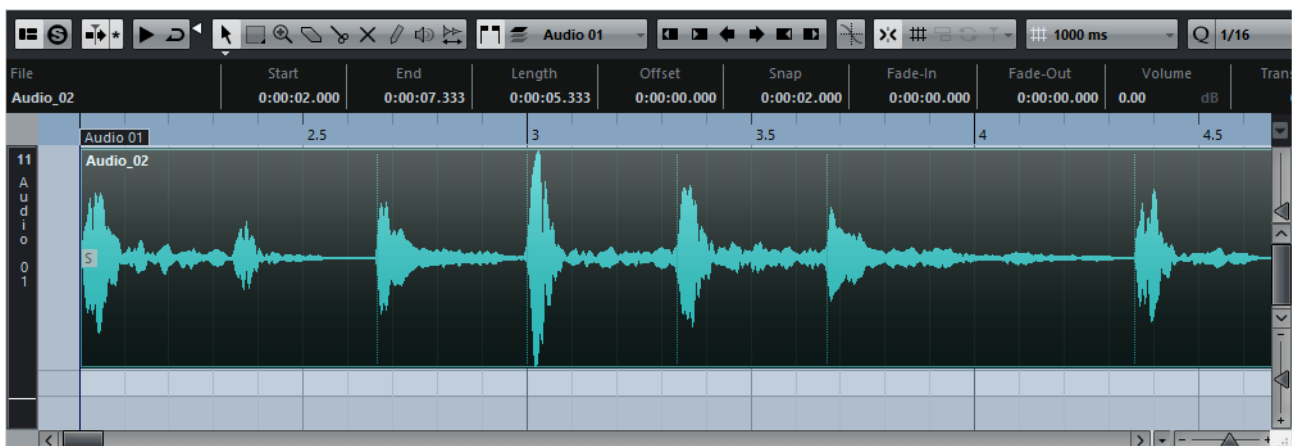
Toolbar

The tools, settings, and icons on the toolbar have the same functionality as in the Project window, with the following differences:

- A Solo button.

- Separate tools for auditioning (Speaker) and scrubbing.

- No Line or Glue Tube tools.

- Play and Loop icons and an Audition Volume control.

- Independent Track Loop settings.

- Part List controls for handling several parts: activating parts for editing, restricting editing to active parts only and showing part borders.

NOTE

You can customize the toolbar by hiding or reordering its items.

RELATED LINKS

The Ruler and Info Line

These have the same functionality and appearance as their counterparts in the Project window.

You can select a separate display format for the Audio Part Editor ruler by clicking on the arrow button on the right and selecting an option from the pop-up menu.

RELATED LINKS

Opening the Audio Part Editor

The Audio Part Editor can display several parts at once, and you can also have more than one Audio Part Editor open at the same time.

PROCEDURE

1. Select one or more audio parts in the Project window.
2. Double-click on any one of them or use the Edit-Open key command, by default [Ctrl]/[Command]-[E].

   Double-clicking on an audio event in the Project window will open the Sample Editor.

RELATED LINKS
Opening the Sample Editor on page 282

About Lanes

Lanes can make it easier to work with several audio events in a part. Moving some of the events to another lane can make selection and editing much easier.
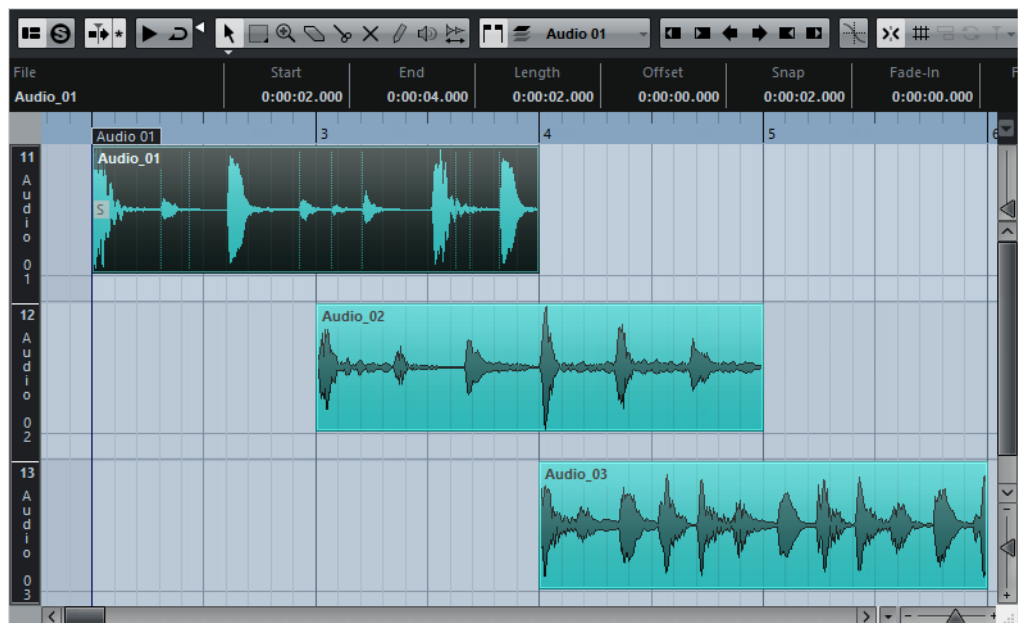
If the Snap function is deactivated and you want to move an event to another lane without accidentally moving it horizontally, press [Ctrl]/[Command] while dragging it up or down.

RELATED LINKS
Track Handling on page 91

Operations

Zooming, selecting and editing in the Audio Part Editor are done just as in the Project window.

NOTE

If a part is a shared copy (i.e. you have previously copied the part by [Alt]/[Option]-[Shift] and dragging), any editing you perform will affect all shared copies of this part.

RELATED LINKS

Auditioning

There are several ways to listen to the events in the Audio Part Editor.

By Using the Speaker Tool

If you click somewhere in the editor's event display with the Speaker tool and keep the mouse button pressed, the part will be played back from the position where you clicked. Playback will continue until you release the mouse button.

By Using the Audition Icon

▶ ⊃

Audition and Audition Loop icons

Clicking the Audition icon on the toolbar plays back the edited audio, according to the following rules:

▪ If you have selected events in the part, only the section between the first and last selected event will be played back.

▪ If you have made a range selection, only this section will be played back.

▪ If there is no selection, the whole part will be played back. If the project cursor is within the part, playback starts from the current cursor position. If the cursor is outside the part, playback starts from the beginning of the part.

▪ If the Audition Loop icon is activated, playback will continue until you deactivate the Audition icon. Otherwise, the section will be played back once.

When auditioning with the Speaker tool or Audition icon, audio will be routed directly to the Main Mix (the default output bus).

By Using Regular Playback

You can of course use the regular playback controls while in the Audio Part Editor. Furthermore, if you activate the Solo Editor button on the toolbar, only the events in the edited part will be played back.

Using Key Commands

If you activate the "Playback Toggle triggers Local Preview" option in the Preferences dialog (Transport page), you can start/stop auditioning by pressing [Space]. This is the same as clicking the Audition icon on the toolbar.

NOTE

The Audio Part Editor also supports the key commands "Preview start" and "Preview stop" in the Media category of the Key Commands dialog. These key commands stop the current playback, no matter if you are in normal playback or in audition mode.

Setting Up the Independent Track Loop

The independent track loop is a sort of mini-cycle, affecting only the edited part. When the loop is activated, the events in the parts that are within the loop will be repeated continuously and completely independent – other events (on other tracks) are played back as usual. The only interaction between the loop and the regular playback is that the loop starts every time the cycle starts over again.

PROCEDURE

1. Turn on the loop by clicking the Independent Track Loop button on the toolbar.

   If it is not visible, right-click the toolbar and add the Independent Track Loop Settings section.
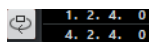
   When the loop is activated, the cycle is not shown in the editor's ruler. Now you need to specify the length of the loop.

2. [Ctrl]/[Command]-click in the ruler to set the start and [Alt]/[Option]-click to set the end of the loop.

   NOTE

   You can also edit the loop start and end positions numerically in the fields next to the Loop button.

RESULT

The loop is indicated in purple in the ruler.

NOTE

The events will be looped as long as the Loop button is activated and the Audio Part Editor window is open.

Scrubbing

In the Audio Part Editor, the Scrub tool has a separate icon on the toolbar. Apart from that, scrubbing works exactly as in the Project window.

Handling Several Parts

When you open the Audio Part Editor with several parts selected – all on the same track or on different tracks – they might not all fit in the editor window, which can make it hard to get an overview of the different parts when editing.

Therefore, the toolbar features a few functions to make working with multiple parts easier and more comprehensive:

- The "Currently Edited Part" pop-up menu lists all parts that were selected when you opened the editor, and lets you select which part is active for editing.

 When you select a part from the list, it is automatically made active and centered in the display.
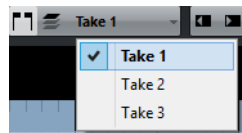
NOTE

Note that it is also possible to activate a part by clicking on it with the Object Selection tool.

- The "Edit Active Part Only" button lets you restrict editing operations to the active part only.

  If you for example select "All" from the Select submenu of the Edit menu with this option activated, all events in the active part will be selected but not the events in other parts.
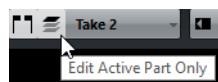
- You can zoom in on an active part so that it is displayed in its entirety in the window by selecting "Zoom to Event" from the Zoom submenu of the Edit menu.

- The "Show Part Borders" button can be used if you want to see clearly defined borders for the active part.

  When this is activated, all parts except the active one are grayed out, making the borders easily discernible. There are also two markers in the ruler with the name of the active part, marking its beginning and end. These can be moved freely to change the part borders.
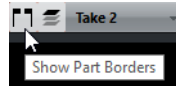
- It is possible to cycle between parts, making them active using key commands.In the Key Commands dialog – Edit category, there are two functions: "Activate Next Part" and "Activate Previous Part". If you assign key commands to these, you can use them to cycle between parts.

RELATED LINKS
Setting up key commands on page 603

Options and Settings

The following options and settings are available in the Audio Part Editor:

Snap

The Snap functionality in the Audio Part Editor is exactly the same as in the Project window.

Auto-Scroll

When Auto-Scroll is activated on the toolbar, the window will scroll during playback, keeping the project cursor visible in the editor. This setting can be activated or deactivated individually for each window.

Snap to Zero Crossing

When this option is activated, all audio edits are done at zero crossings (positions in the audio where the amplitude is zero). This helps you avoid pops and clicks which might otherwise be caused by sudden amplitude changes.

RELATED LINKS
Snap Function on page 39

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 Windows Explorer/Mac OS Finder display folders and file lists. In the Pool, you can perform operations that affect files on disk and operations that only affect clips.

Operations That Affect Files

- Importing clips (audio files can automatically be copied and/or converted)

- Converting file formats

- Renaming clips (this also renames the referenced files on disk) and regions

- Deleting clips

- Preparing file archives for backup

- Minimizing files

Operations That Affect Clips

- Copying clips

- Auditioning clips

- Organizing clips

- Applying audio processing to clips

Pool Window

The Pool window allows you to manage the media files of the active project.

You can open the Pool in the following ways:

- On the **Project** window toolbar, click the **Open Pool Window** button. If this icon is not visible, you must activate the **Media & MixConsole Windows** option on the toolbar context menu.

- Select **Project > Pool**.

- Select **Media > Open Pool Window**.
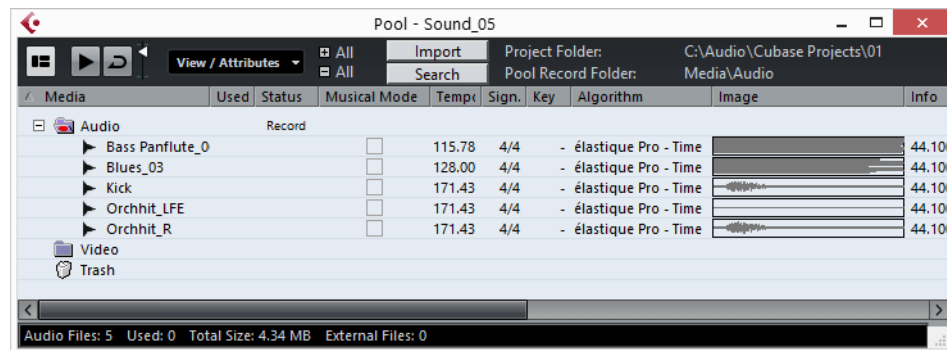
The content of the Pool is divided into the following folders:

Audio Folder

Contains all audio clips and regions that are currently in the project.

Video Folder

Contains all video clips that are currently in the project.

Trash Folder

Contains unused clips that have been moved here for later permanent removal from the hard disk.

NOTE

You cannot rename or delete these folders, but you can add any number of subfolders.

Toolbar

1) **Show Info**

Activates/deactivates the info line.

2) **Audition**

If this option is activated and you select a clip in the Pool, it is played back.

3) **Audition Loop**

If this option is activated, the playback of the selected clip is looped.

4) **Volume**

Lets you specify the playback volume.

5) **View/Attributes**

Lets you activate/deactivate which attributes are displayed in the **Pool** window.

6) **Open/Close all folders**

Opens/Closes all folders.

7) **Import**

Lets you import media files to the Pool.

8) **Search**

Lets you search the Pool and connected disks for media files.

9) **Project Folder**

Displays the path to the folder of the active project.

10) **Pool Record Folder**

Displays the path to the record folder of the active project. By default, this is the `Audio` folder. However, you can create a new `Audio` subfolder and designate this as your Pool record folder.

Pool Window Columns

Various information about the clips and regions can be viewed in the Pool window columns. The columns contain the following information:

Media

Contains the Audio, Video, and Trash folders. If the folders are opened, the clip or region names are shown and can be edited.

Used

Displays how many times a clip is used in the project. If there is no entry in this column, the corresponding clip is not used.

Status

Displays various icons that relate to the current Pool and clip status. The following symbols can be displayed:

- Record

  Indicates the current Pool record folder.

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-

  Indicates that a clip has been processed.

-

  Indicates that a clip is referenced in the project but missing from the Pool.

-

  Indicates that the file the clip related to is external, for example, located outside the current Audio folder for the project.

-

  Indicates that the clip has been recorded in the currently open version of the project. This is useful for finding recently recorded clips quickly.

Musical Mode

You can use the Musical Mode to tempo-match audio loops to the project tempo. The checkbox in this column allows you to activate or deactivate Musical Mode. If the Tempo column displays "???", you must enter the correct tempo before you can activate Musical Mode.

Tempo

Displays the tempo of audio files, if available. If no tempo has been specified, the column displays "???".

Sign.

Displays the time signature, for example, "4/4".

Key

Displays the root key if one has been specified for the file.

Algorithm

Displays the algorithm preset that is used if the audio file is processed.

- To change the default preset, click the preset name and select another preset from the pop-up menu.

Info

For audio clips, this column displays the sample rate, bit resolution, number of channels, and length.

For regions, it displays start and end times in frames.

For video clips, it displays the frame rate, resolution, number of frames, and length.

Type

Displays the file format of the clip.

Date

Displays the date when the audio file was last changed.

Origin Time

Displays the original start position where a clip was recorded in the project. As this value can be used as a basis for the **Insert into Project** option in the **Media** or context menu, you can change it if the Origin Time value is independent (for example, not for regions).

Cubase Elements only: You can change the value by editing the value in the column, or by selecting the corresponding clip in the Pool, moving the project cursor to the new position and selecting **Audio > Update Origin**.

Image

Displays waveform images of audio clips or regions.

Path

Displays the path to the location of a clip on the hard disk.

Reel Name

Audio files may include this attribute, which is then shown in this column. The Reel Name describes the reel or tape from which the media was originally captured.

Info Line

The info line displays additional information regarding the files in the pool.

▪ To activate the info line, click the **Show Info** button at the left of the toolbar.

Audio Files: 5   Used: 0   Total Size: 4.34 MB   External Files: 0

The info line shows the following information:

Audio Files

The number of audio files in the Pool.

Used

The number of audio files in use.

Total Size

The total size of all audio files in the Pool.

External Files

The number of files in the Pool that do not reside in the project folder (for example, video files).

Customizing the View

You can set up which columns are shown or hidden and rearrange the order of the columns in the Pool.

▪ To specify which columns are shown or hidden, open the **View/Attributes** menu on the toolbar, and activate or deactivate items.

▪ To rearrange the order of columns, drag a column heading to the left or right.

Working with the Pool

NOTE

Most of the Pool-related main menu functions are also available on the Pool context menu.

Renaming Clips or Regions in the Pool

IMPORTANT

Renaming clips or regions in the Pool also renames the referenced files on disk. It is recommended to rename clips or regions in the Pool. Otherwise, the reference from the clip to the file may get lost.

PROCEDURE

1. In the **Pool** window, select a clip or region, and click the existing name.

2. Type in a new name and press [Return].

RELATED LINKS

Duplicating Clips in the Pool

You can create duplicates of clips and apply different processing methods to them.

NOTE

Duplicating a clip does not create a new file on disk, but a new edit version of the clip that refers to the same audio file.

PROCEDURE

1. In the **Pool** window, select the clip that you want to duplicate.

2. Select **Media > New Version**.

RESULT

A new version of the clip appears in the same Pool folder. The duplicated clip has the same name as the original but with a version number after it. Regions within a clip are also copied, but keep their name.

Inserting Clips into a Project

To insert a clip into a project, you can either use the insert commands on the **Media** menu or use drag and drop.

Inserting Clips into a Project Via Menu Commands

PROCEDURE

1. In the **Pool** window, select the clips that you want to insert into the project.
2. Select **Media > Insert into Project** and select one of the insert options.

   If several clips are selected, choose whether to insert them on one track or each on a different track.

   NOTE

   The clips are positioned so that their snap points are aligned with the selected insert position. If you want to adjust the snap point before inserting a clip, double-click a clip to open the Sample Editor. Here, you can adjust the snap position and then perform the insert options.

RESULT

The clip is inserted on the selected track or on a new audio track. If several tracks are selected, the clip will be inserted on the first selected track.

RELATED LINKS

Adjusting the snap point on page 289

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 the snap option is activated.

While you drag the clip into the **Project** window, its position is indicated by a marker line and a numerical position box. These indicate the position of the snap point in the clip.

If you position the clip in an empty area in the event display (for example, below existing tracks), a new track is created for the inserted event.

RELATED LINKS

Adjusting the snap point on page 289

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

Removing clips from the Pool does not delete the corresponding file 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 in other projects, etc. This operation can be undone.

Deleting Files from the Hard Disk

To delete a file permanently from the hard disk, you must first move the corresponding clips to the Trash folder in the Pool.

IMPORTANT

- Before you permanently delete audio files from the hard disk, make sure that they are not used in another project.
- The following operation cannot be undone.

PROCEDURE

1. In the **Pool** window, select the clips that you want to delete from the hard disk, and select **Edit > Delete**

   You can also press [Backspace] or [Delete], or drag the clips into the Trash folder.

   NOTE

   You can retrieve a clip or region from the Trash folder by dragging it back into an Audio or Video folder.

2. Depending on whether the clips are used by an event, you have the following options:
   - If the clips are used by an event, click **Remove** and then click **Trash**.
   - If the clips are not used by an event, click **Trash**.

3. Select **Media > Empty Trash**.

4. Click **Erase**.

RESULT

The files are deleted from the hard disk.

Removing Unused Clips from the Pool

You can find all clips in the Pool that are not used in the project. This allows you to quickly remove all unused clips.

PROCEDURE

1. In the Pool, select **Media > Remove Unused Media**.

2. Do one of the following:
   - To move the clips to the Trash folder, select **Trash**.
   - To remove the clips from the Pool, select **Remove from Pool**.

Removing Regions from the Pool

PROCEDURE

- In the Pool, select a region and select **Edit > Delete**.
  You can also press [Backspace] or [Delete].

  IMPORTANT

  You are not warned if the region is still in use.

Locating Events and Clips

You can quickly display to which clips the selected events belong to and to which events the selected clips belong to.

Locating Events via Clips in the Pool

You can find out which events in the project refer to a particular clip in the Pool.

PROCEDURE

1. In the **Pool** window, select one or more clips.
2. Select **Media > Select in Project**.

RESULT

All events that refer to the selected clips are now selected in the **Project** window.

Locating Clips via Events in the Project Window

You can find out which clip belongs to a particular event in the **Project** window.

PROCEDURE

1. In the **Project** window, select one or more events.
2. Select **Audio > Find Selected in Pool**.

RESULT

The corresponding clips are located and highlighted in the Pool.

Searching for Audio Files

The search functions help you locate audio files in the Pool, on your hard disk, or on other media. This works much like the regular file search, but with extra features.

PROCEDURE

1. In the **Pool** window, click the **Search** button on the toolbar.
    A search pane appears at the bottom of the window, displaying the search functions.
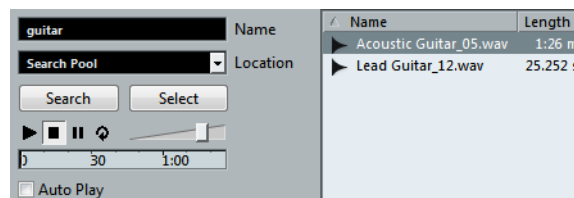
2. Specify the files that you search for in the **Name** field.
    You can use partial names or wildcards (*).

    NOTE

    Only audio files of the supported formats will be found.

3. Use the **Location** pop-up menu to specify where to search.
    The pop-up menu lists all your local drives and removable media.

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- To limit the search to certain folders, select **Select Search Path**, and in the dialog that opens, select the folder in which you want to search.

The search will include the selected folder and all subfolders.

> NOTE
>
> Folders that you have recently selected using the **Select Search Path** function appear on the pop-up menu, so that you can quickly select them again.

4. Click the **Search** button.

   The search is started and the **Search** button is labeled **Stop**.
   - To cancel the search, click **Stop**.

   When the search is finished, the files that are found are listed on the right.
   - To audition a file, select it in the list and use the playback controls to the left (Play, Stop, Pause, and Loop). If **Auto Play** is activated, selected files are automatically played back.
   - To import a file into the Pool, double-click the file in the list or select it and click the **Import** button.

5. To close the search pane, click the **Search** button on the toolbar again.

Using the Extended Search Functionality

Apart from the search criterion Name, additional search filters are available. The extended search options allow for a detailed search, helping you to master even the largest sound database.

PROCEDURE

1. In the **Pool** window, click the **Search** button on the toolbar

   The Search pane is displayed in the lower part of the Pool window.

2. Click the **Name** text to open the extended search pop-up menu where you can select and define a search criterion.
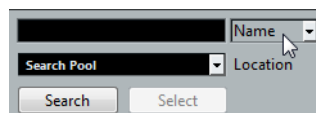
   The menu also contains the **Add Filter** and **Presets** submenus.

   The search criteria have the following parameters:
   - **Name**: partial names or wildcards (*)
   - **Size**: Less than, More than, Equal, Between (two values), in seconds, minutes, hours, and bytes
   - **Bitsize** (resolution): 8, 16, 24, 32
   - **Channels**: Mono, Stereo, and from 3 to 16
   - **Sample Rate**: various values, choose **Other** for free setting
   - **Date**: various search ranges

3. Select one of the search criteria in the pop-up menu.

   The search criteria changes to the selected criteria.

4. Optional: To display more search options, open the extended search pop-up menu, select the **Add filter** submenu, and select an element.

5.   Optional: To save your search filter settings as a preset, open the extended search pop-up menu, select **Presets > Save Preset**, and enter a name for the preset.

Saved presets are added to the **Presets** submenu.

6.   Optional: To remove a search filter settings preset, open the extended search pop-up menu, select the preset, and then select **Remove Preset**.

Find Media Window

The **Find Media** window is a stand-alone window that offers the same functionality as the **Search Media** option in the Pool.

•   To open the **Find Media** window, select **Media > Search Media**.

•   To insert a clip or region into the project from the **Find Media** window, select it in the list, select **Media > Insert into Project**, and select one of the insert options.

RELATED LINKS

About Missing Files

When you open a project and one or more files are missing, the **Resolve Missing Files** dialog opens. If you click **Close**, the project opens without the missing files.

In the Pool, you can check which files are considered missing. This is indicated by a question mark in the **Status** column.

A file is considered missing under one of the following conditions:

•   The file has been moved or renamed outside the program since you last worked with the project, and you ignored the **Resolve Missing Files** dialog when you opened the project for the current session.

•   You have moved or renamed the file outside the program during the current session.

•   You have moved or renamed the folder in which the missing files are located.

Locating Missing Files

PROCEDURE

1.   Select **Media > Find Missing Files**.

2.   In the **Resolve Missing Files** dialog, decide if you want the program to find the file for you (**Search**), if you want to find it yourself (**Locate**), or if you want to specify in which directory the program will search for the file (**Folder**).

- If you select **Search**, a dialog opens to let you specify which folder or disk will be scanned by the program. Click the **Search Folder** button, select a directory or a disk, and click the **Start** button. If found, select the file from the list and click **Accept**. Afterwards Cubase tries to map all other missing files automatically.
- If you select **Locate**, a file dialog opens, allowing you to locate the file manually. Select the file and click **Open**.
- If you select **Folder**, a dialog opens to let you specify the directory in which the missing file can be found. This might be the preferred method if you have renamed or moved the folder containing the missing file, but the file still has the same name. Once you select the correct folder, the program finds the file and you can close the dialog.

Reconstructing Missing Edit Files

If a missing file cannot be found, this is normally indicated with a question mark in the **Status** column in the Pool. However, if the missing file is an edit file (a file that is created when you process audio and stored in the Edits folder within the project folder), it may be possible for the program to reconstruct it by recreating the editing to the original audio file.

PROCEDURE

1. In the **Pool** window, locate the clips for which files are missing.

2. Check the **Status** column. If the status of the files is "Reconstructible", the files can be reconstructed by Cubase.

3. Select the reconstructable clips and select **Media > Reconstruct**.

RESULT

The editing is performed and the edit files are recreated.

Removing Missing Files from the Pool

If the Pool contains audio files that cannot be found or reconstructed, you may want to remove these.

PROCEDURE

- In the **Pool** window, select **Media > Remove Missing Files**.

RESULT

All missing files from the Pool and the corresponding events from the **Project** window are removed.

Auditioning Clips in the Pool

You can audition clips in the Pool using key commands, the **Audition** button, or by clicking in the waveform image for a clip.

- Key commands

  If you activate the **Playback Toggle triggers Local Preview** option in the Preferences dialog (Transport page), you can use [Space] to audition. This is the same as activating the **Audition** button on the toolbar.

- Select a clip and activate the **Audition** button.

  The whole clip plays back. To stop playback, click the **Audition** button 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 the **Audition** button 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 the **Audition Loop** button before you audition, the following happens:

- When you click the **Audition** button to audition a clip, the clip is repeated indefinitely until you stop playback by clicking the **Audition** or **Audition Loop** button again.

- When you click in the waveform image to audition, the section from the selected point to the end of the clip is repeated indefinitely until you stop playback.

Opening Clips in the Sample Editor

The Sample Editor allows you to perform detailed editing on the clip.

- To open a clip in the Sample Editor, double-click a clip waveform icon or a clip name in the **Media** column.

- To open a certain region of a clip in the Sample Editor, double-click a region in the Pool.

  You can use this to set a snap point for a clip, for example. When you later insert the clip from the Pool into the project, the defined snap point allows it to be properly aligned.

RELATED LINKS

Importing Media

The **Import Medium** dialog lets you import files directly into the Pool.

To open the dialog, select **Media > Import Medium**, or click the **Import** button on the Pool toolbar.

This opens a standard file dialog, where you can navigate to other folders, audition files, etc. The following audio file formats can be imported:

- Wave (Normal or Broadcast)

- AIFF and AIFC (Compressed AIFF)

- REX or REX 2

- FLAC (Free Lossless Audio Codec)

- SD2 (Sound Designer II) (Mac only)

- MPEG Layer 2 and Layer 3 (MP2 and MP3 files)

- Ogg Vorbis (OGG files)

- Windows Media Audio (Windows only)

- Wave 64 (W64 files)

The following characteristics are possible:

- Stereo or mono

- Any sample rate

  NOTE

  Files that have a different sample rate than the project sample rate are played back at the wrong speed and pitch.

- 8, 16, 24, or 32 bit float resolution

- Various video formats

NOTE

You can also use the commands on the **Import** submenu of the **File** menu to import audio or video files into the Pool.

RELATED LINKS
Broadcast Wave files on page 559
Importing ReCycle files on page 620
Importing compressed audio files on page 621
Video File Compatibility on page 585

Importing Audio CDs in the Pool

You can import tracks or sections of tracks from an audio CD directly into the Pool. This opens a dialog in which you can specify which tracks are copied from the CD, converted to audio files, and added to the Pool.

▪ To import an audio CD to the Pool, select **Media > Import Audio CD**.

RELATED LINKS

Import Options Dialog

When you select a file in the **Import Medium** dialog and click **Open**, the **Import Options** dialog opens.
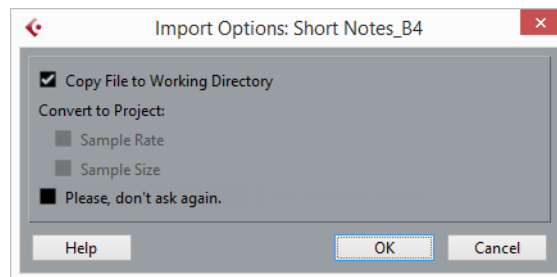
Copy File to Working Directory

If this option is activated, the file is copied to the Audio folder of the project, and the clip refers to this copy.

If the option is deactivated, the clip refers to the original file in the original location and will be marked as "external" in the Pool.

Convert to Project

If you are importing a single audio file, you can convert the sample rate provided that the sample rate is different than the one set for the project. You can also convert the sample size provided that the sample size is lower than the record format that is used in the project.

If you are importing several audio files at once, the **Import Options** dialog contains a **Convert and Copy to Project if needed** checkbox instead. When this option is activated, the imported files will be converted only if the sample rate is different or if the sample size is lower than the project sample size.

Please, don't ask again

If this option is activated, files will always be imported according to the settings that you have made, without this dialog appearing. This can be reset in the Preferences dialog (**Editing > Audio**).

NOTE

You can also convert files later with the **Convert Files** or **Conform Files** options.

Exporting Regions as Audio Files

If you have created regions within an audio clip, these can be exported as separate audio files. If you have two clips that refer to the same audio file, you can create a separate audio file for each clip.

PROCEDURE

1. In the **Pool** window, select the region that you want to export.

2. Select **Audio > Bounce Selection**.

3. Select the folder in which you want the new file to be created and click **OK**.

4. If you are using the **Bounce Selection** option to create a separate audio file for a clip that refers to the same audio file as another clip, enter a name for the new audio file.

RESULT

A new audio file is created in the specified folder. The file has the name of the region and is automatically added to the Pool.

Changing the Pool Record Folder

All audio clips that you record in the project will end up in the Pool Record folder. The Pool Record folder is indicated by the text Record in the Status column and by a red dot on the folder itself.

By default, this is the main Audio folder. However, you can create a new Audio subfolder and designate this as your Pool Record folder.

NOTE

The folders that you create in the Pool are only for organizing your files in the Pool. All files are recorded to the folder that you specified as the Pool Record Folder.

PROCEDURE

1. In the Pool, select the Audio folder or any audio clip.

   NOTE

   You cannot designate the Video folder or any of its subfolders as the Pool Record folder.

2.   Select **Media > Create Folder**.

3.   Rename the new folder.

4.   Select the new folder and select **Media > Set Pool Record Folder**, or click in the **Status** column of the new folder.

RESULT

The new folder becomes the Pool Record folder. Any audio recorded in the project will be saved in this folder.

Organizing Clips and Folders

If you accumulate a large number of clips in the Pool, it can be difficult to quickly find specific items. Organizing clips in new subfolders with names that reflect the content can be a solution. For example, you could put all sound effects in one folder, all lead vocals in another, etc.

PROCEDURE

1.   In the **Pool** window, select the type of folder, audio or video, for which you want to create a subfolder.

NOTE

You cannot put audio clips in a video folder and vice versa.

2.   Select **Media > Create Folder**.

3.   Rename the folder.

4.   Drag the clips to the new folder.

Applying Processing to Clips in the Pool

You can apply audio processing to clips from within the Pool in the same way as to events in the **Project** window.

PROCEDURE

1.   In the **Pool** window, select the clips that you want to process.

2.   Select **Audio > Process** and select a processing method.

RESULT

A red and gray waveform symbol indicates that the clips have been processed.

RELATED LINKS
Audio processing and functions on page 262

Minimizing Files

You can minimize the audio files according to the size of the audio clips referenced in the project. The files that are produced using this option only contain the audio file portions that are actually used in the project.

This can significantly reduce the size of the project if large portions of the audio files are unused. Therefore, the option is useful for archiving purposes after you have completed a project.

IMPORTANT

This operation will permanently change the selected audio files in the Pool. This cannot be undone. If you only want to create the minimized audio files as a copy, leaving the original project untouched, you can use the **Back up Project** option.

NOTE

Minimizing files clears the entire edit history.

PROCEDURE

1. In the **Pool** window, select the files that you want to minimize.

2. Select **Media > Minimize File**.

3. Click **Minimize**.

    After the minimizing is finished, the file references in the stored project have become invalid.

4. Do one of the following.
    ▪   To save the updated project, click **Save Now**.
    ▪   To proceed with the unsaved project, click **Later**.

RESULT

Only the audio portions that are actually used in the project remain in the corresponding audio files in the Pool Record folder.

RELATED LINKS

[Backing Up Projects on page 57](#)

Converting Files

In the Pool, you can convert files to another format or change file attributes.

PROCEDURE

1. In the **Pool** window, select the files that you want to convert.

2. Select **Media > Convert Files**.

3. In the **Convert Options** dialog, make your settings and click **OK**.

Convert Options Dialog

In this dialog, you can change the file format and attributes of audio files in the Pool.

To open the **Convert Options** dialog, select a clip in the **Pool** window, and select **Media > Convert Files**.
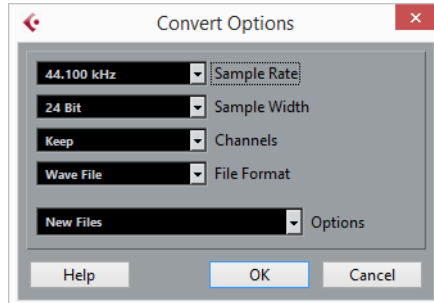
Sample Rate

Allows you to convert to another sample rate.

Sample Width

Allows you to convert to 16 Bit, 24 Bit, or 32 Bit Float.

Channels

Allows you to convert to Mono or Stereo Interleaved.

File Format

Allows you to convert to Wave, AIFF, Wave 64, or Broadcast Wave format.

Options

You can use the **Options** pop-up menu to set one of the following options:

▪ **New Files**

Creates a copy of the file in the audio folder and converts this new file according to the chosen attributes. The new file is added to the Pool, but all clip references still point to the original, unconverted file.

▪ **Replace Files**

Converts the original file without changing clip references. However, the references are saved with the next save action.

▪ **New + Replace in Pool**

Creates a new copy with the chosen attributes, replaces the original file with the new one in the Pool and redirects the current clip references from the original file to the new file. Select the latter option if you want your audio clips to refer to the converted file, but want to keep the original file on disk, for example, if the file is used in other projects.

Conforming Files

You can align the file attributes with the project attributes. This is useful if the attributes of the selected files are different from the project attributes.

PROCEDURE

1. In the **Pool** window, select the clips that you want to conform.

2. Select **Media > Conform Files**.

3. Select whether to keep or replace the original unconverted files in the Pool.
    -   If you select the **Replace** option, files in the Pool and in the Audio folder of the project are replaced.
    -   If any **Keep** option is selected, original files remain in the Audio folder of the project and new files are created.

RESULT

The files are conformed. Clip or event references in the Pool are redirected to the conformed files.

Extracting Audio from Video File

You can extract audio from video files. This automatically generates a new audio clip that appears in the Pool Record folder.

NOTE

This function is not available for MPEG-1 video files.

PROCEDURE

1. In the **Pool** window, select **Media > Extract Audio from Video File**.

2. Select the video file from which you want to extract audio and click **Open**.

RESULT

The audio is extracted from the video file. The audio file gets the same file format and sample rate/width as in the current project, and the same name as the video file.

MediaBay

With the **MediaBay**, you can manage all your media files and presets from multiple sources.

To open the **MediaBay**, select **Media > MediaBay**, or press [F5].
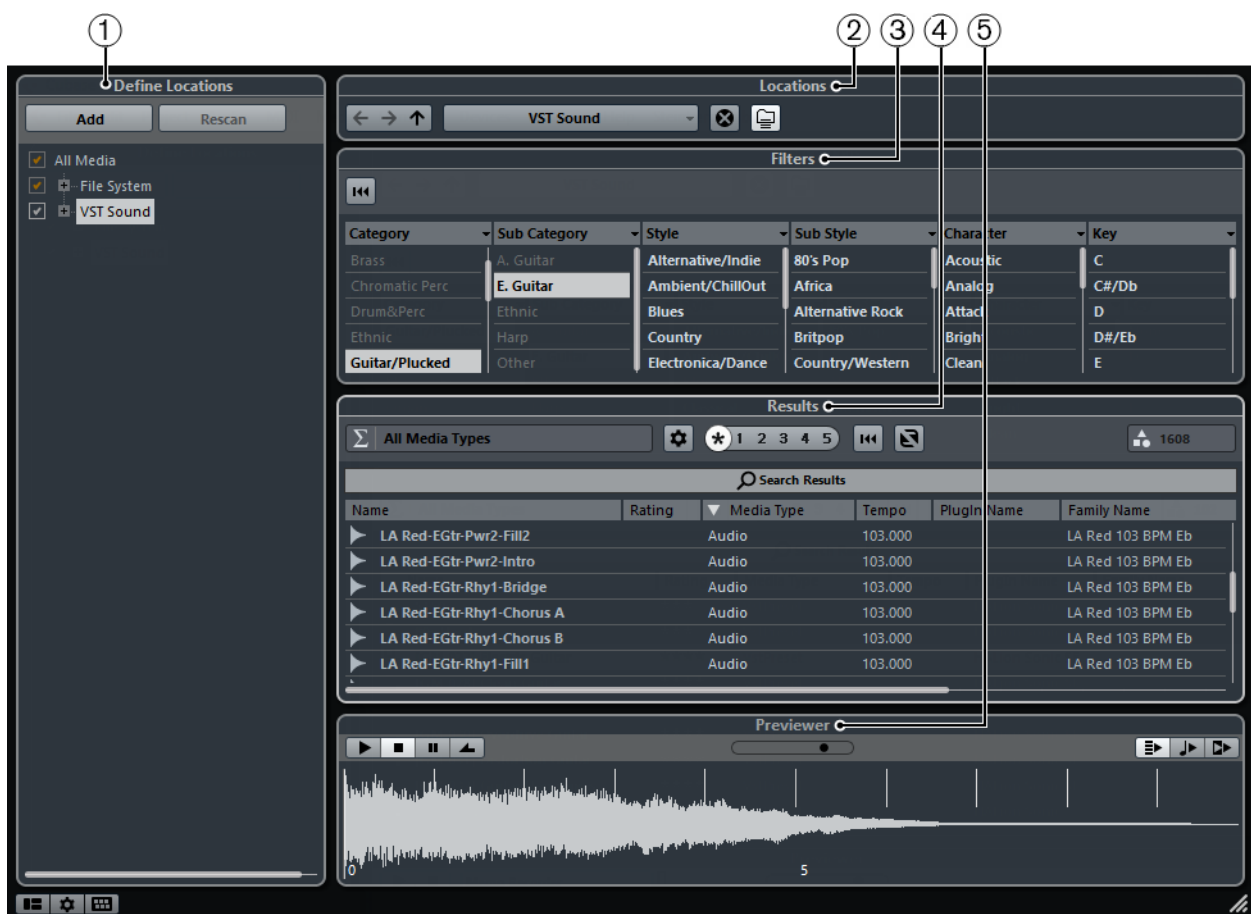
The **MediaBay** is divided into several sections:

1) **Define Locations**

   Allows you to create presets for locations on your system that you want to scan for media files.

2) **Locations**

   Allows you to switch between the previously defined locations.

3) **Filters**

   Allows you to filter the results list using a logical or an attribute filter.

4) **Results**

Displays all found media files. You can filter the list and perform text searches.

5) **Previewer**

Allows you to preview the files shown in the results list.

Working With the MediaBay

When working with many music files, the most important thing is to find the content that you need quickly and easily.

The **MediaBay** helps you to find and organize your content. After scanning your folders, all media files of the supported formats that have been found are listed in the **Results** section.

The first thing to do is to set up **Locations**, that is folders or directories on your system that contain media files. Usually, files are organized in a specific way on your computer. You might have folders reserved for audio content, folders for special effects, folders for combinations of sounds making up the ambience noise that you need for a certain film take, etc. These can all be set as different **Locations** in the **MediaBay**, allowing you to limit the files available in the **Results** list according to context.

Whenever you expand your computer system, you should save the new volumes as **Locations** or add them to your existing Locations.

By using the search and filter options, you can narrow down the results.

You can insert the files into your project by using drag & drop, by double-clicking, or by using the context menu options.

Setting Up the MediaBay

You can show and hide the different sections of the **MediaBay**. This saves screen space and enables you to display only the information that you need.

PROCEDURE

1. Click the **Set up Window Layout** button in the lower left corner of the **MediaBay**.

A transparent pane appears, containing checkboxes for the different sections.
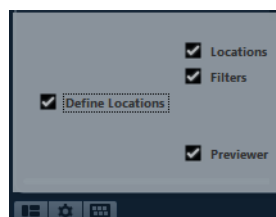
2. Deactivate the checkboxes for the sections that you want to hide.

You can also use key commands for this: use the [Up]/[Down] and [Left]/[Right] arrow keys to step through the checkboxes and press [Space] to activate/deactivate the selected checkbox.

3. When you are done, click outside the pane to exit the setup mode.

Define Locations Section

In the **Define Locations** section, you can specify which folders or directories you want to include in the scan for media files. To do so, activate/deactivate the checkboxes for the folders.
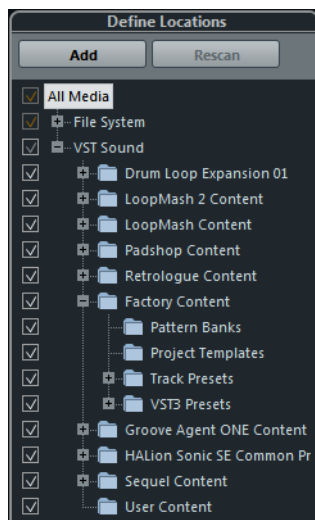
The color of the checkmark helps you to identify which folders and subfolders are scanned:

▪ White indicates that all subfolders are scanned.

▪ Orange indicates that at least one subfolder is excluded from the scan.

To revert to scanning a complete folder including all subfolders, click on an orange checkmark.

The scanning status for the individual folders is indicated by the color of the folder icons:

▪ Red indicates that the folder is currently being scanned.

▪ Light blue indicates that the folder has been scanned.

▪ Dark blue indicates that a folder is excluded from the scan.

▪ Orange indicates that the scanning process for the folder was interrupted.

▪ Yellow indicates that a folder has not yet been scanned.

VST Sound Node

The VST Sound node is a shortcut to your user content and the factory content files, including the preset folders.

The folders below the VST Sound node represent the directories in which content files and track presets, VST presets, etc. are stored by default.

Scanning Your Content

You can specify which folders or directories you want to include in the scan.

- To include a folder in the scan, activate its checkbox.

- To exclude a folder from the scan, deactivate its checkbox.

- To restrict the search to individual subfolders, activate/deactivate their checkboxes.

The scan result is saved in a database file. When you deactivate the checkbox for a folder that has already been scanned, a message appears, allowing you to keep the gathered scan data in this database file or to completely remove the data for this folder from the database file.

- To keep the database entries and exclude the folder from being scanned, select **Keep**.

- To remove the contents from the database, select **Remove**.

All files that are found in the specified folders are shown in the **Results** list.

Updating the MediaBay

When you have made changes to the content of media folder or modified attributes, you must update the **MediaBay**. You can update the **MediaBay** by rescanning or by refreshing.

Rescanning

If you have made changes to the content of specific media folders and want those changes to be displayed in the **MediaBay** you must rescan them.

- To rescan the selected folder and its subfolders, click the **Rescan** button in the **Define Locations** section. You can also right-click a folder and select **Rescan Disk**.
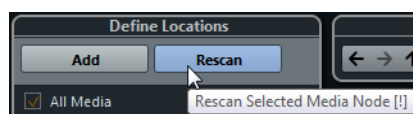
- To rescan only the folders that have changed since the last scan, right-click in the **Define Locations** section, and select **Quick Rescan Disk**.

Refreshing

If you have modified attribute values or mapped a new network, you must refresh the corresponding folders.

- To refresh a folder, in the **Define Locations** section of the **MediaBay** right-click a folder, and select **Refresh Views**.

- To display a new network drive, in the **Define Locations** section of the **MediaBay** right-click the parent node, and select **Refresh Views**. You can then scan the drive for media files.

Locations Section

When you open the **Select Defined Browse Location** pop-up menu and select a location, the media files that are found in that location are shown in the **Results** list. By switching between the locations you defined, you can quickly browse to the files you are looking for.
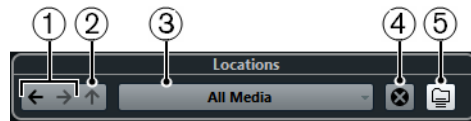
1) **Previous/Next Browse Location**

   Selects the previous/next browse location.

2) **Browse Containing Folder**

   Opens the parent location of the selected folder.

3) **Select Defined Browse Location**

   The following location presets are available by default:

   All Media, Local Harddisks, VST Sound, Documents, Desktop, Music, Cubase Projects.

4) **Remove Browse Location Definition**

   Removes the selected browse location.

5) **Deep Results**

   If this option is activated, the media files that are located in the subfolders of the selected location are also displayed in the results list.

Defining Locations

You can define locations, that is shortcuts to the folders that you want to work with. These are shown in the Locations section.

PREREQUISITE

Set up the Define Locations section and scan the content.

PROCEDURE

1. In the **Define Locations** section in the **MediaBay**, select the folder that you want to define as a location.
2. Click the **Add** button.
3. Accept the default name or enter a new name.
4. Click **OK**.
   The new location is added to the **Select Defined Browse Location** pop-up menu in the **Locations** section.
5. Repeat these steps to add as many locations as you want.

AFTER COMPLETING THIS TASK

Once you have set up your locations, you can hide the **Define Locations** section from view, to save screen space.

Browsing the Locations

You can quickly switch between different locations.

- To change the browse location, select another location from the **Select Defined Browse Location** pop-up menu.

  If the available locations do not include the files that you want to display or if the folder that you want to scan for files is not part of any of the locations, define a new location in the **Define Locations** section.

- To select the previous or next folder, click the **Previous/Next Browse Location** buttons. These paths are deleted when you close the **MediaBay**.

- To select the parent folder of the selected folder, click the **Browse Containing Folder** button.

- To remove a location from the pop-up menu, select it and click the **Remove Browse Location Definition** button.

- To show the files contained in the selected folder and any subfolders, activate the **Deep Results** button. When this button is deactivated, only the folders and files contained in the selected folder are shown.

Results Section

The **Results** list shows all media files that are found in the selected location.
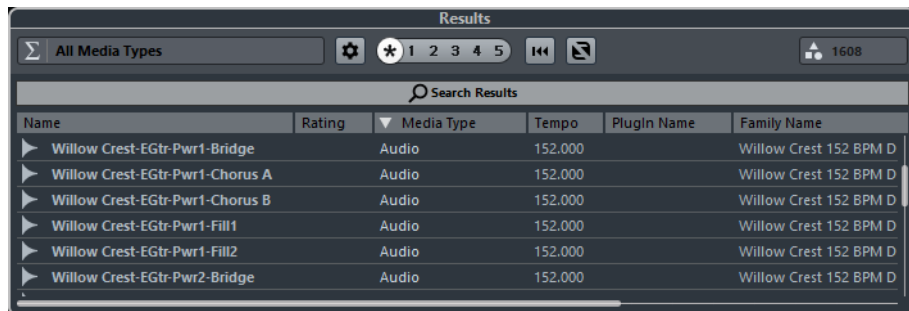
The info field in the top right corner of the **Results** section shows how many files were found with the current filter settings. As the number of files displayed can be huge, you can use any of the filter and search options in the **MediaBay** to narrow down the list.

To set the maximum number of files that are displayed in the Results list, specify a new value for **Maximum Items in Results List** in the **MediaBay Preferences**.

Search in Progress Indicator

An indicator to the right of the number of files found indicates that a media search is in progress.
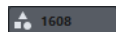
Inserting Files into the Project

PROCEDURE

- To insert a file into your project, do one of the following:
  - Right-click the file and select one of the **Insert into Project** options.
  - Double-click the file.
  - Drag it into the project.

RESULT

Depending on the track type, the following happens:

- Audio files, MIDI loops, and MIDI files are inserted on the active track if this matches the file type or onto a new track if no corresponding track is active. The files are inserted at the project cursor position.

- If you double-click a track preset it is applied to the active track if the track type matches the track preset. Otherwise, a new track is inserted, containing the settings of the track preset.

- If you double-click a VST preset, an instrument track is added to the project, containing an instance of the corresponding instrument. For some VST presets, this loads the entire instrument settings, programs, etc. For others, only one program is loaded.

Setting Up the Results List Columns

For each media type, or for combinations of media types, you can specify the attribute columns that are displayed in the **Results** list.

PROCEDURE

1. In the Results section of the **MediaBay**, select the media types that you want to make settings for.
2. Click the **Set up Result Columns** button and activate or deactivate the options on the submenus.
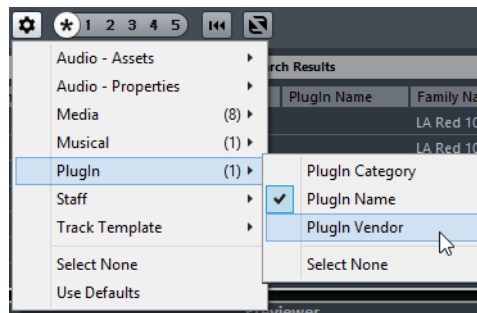
To exclude a particular category, select **Select None** on the corresponding submenu.

Managing Media Files in the Results List

- To move or copy a file from the **Results** list to another location, drag it to another folder in the **Define Locations** section.

- To change the order of the columns in the **Results** list, click on a column header, and drag that header to another position.

- To delete a file, right-click it in the list and select **Delete**. The file is permanently deleted from your computer.

IMPORTANT

If you delete a file using the Windows Explorer/Mac OS Finder, it is still displayed in the **Results** list, although it is no longer available to the program. To remedy this, re-scan the corresponding folder.

Shuffling the Results List

You can display the **Result** list entries in a random order.

- To shuffle the **Results** list, click the **Shuffle Results** button in the **MediaBay**.

Finding the Location of a File

You can open the Windows Explorer/Mac OS Finder to show the location of a file on your system.

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** (Win)/**Reveal in Finder** (Mac).

RESULT

The Windows Explorer/Mac OS Finder opens and the corresponding file is highlighted.

Filtering According to Media Type

You can set up the **Results** list to display only a particular media type or a combination of media types.

PROCEDURE

1. In the **Results** section, click the **Select Media Types** button.
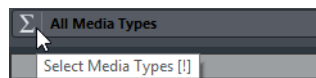
2. In the **Show Media Types** dialog, activate the media types that you want to be displayed in the **Results** list.

    When you have filtered the list to show a particular media type, this is indicated by the corresponding icon to the left of **Select Media Types** button. When you have selected several media types, the **Mixed Media Type** icon is used.

Show Media Types Selector

You can activate the media types that you want to be displayed in the **Results** list.
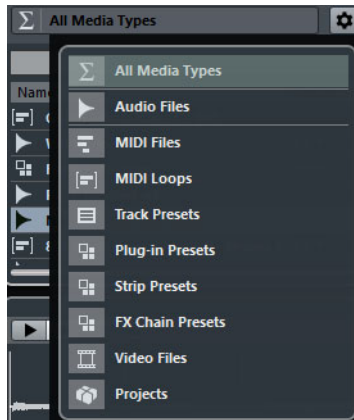
The following media types are available:

Audio Files

> When this option is activated, the list shows all audio files. The supported formats are `.wav`, `.w64`, `.aiff`, `.aifc`, `.rex`, `.rx2`, `.mp3`, `.mp2`, `.ogg`, `.sd2` (Mac only), `.wma` (Win only).

MIDI Files

> When this option is activated, the list shows all MIDI files (file name extension `.mid`).

MIDI Loops

> When this option is activated, the list shows all MIDI loops (file name extension `.midiloop`).

Track Presets

> When this option is activated, the list shows all track presets for audio, MIDI, and instrument tracks (file name extension `.trackpreset`). Track presets are a combination of track settings, effects, and **MixConsole** settings that can be applied to new tracks of various types.

Plug-in Presets

> When this option is activated, the list shows all VST presets for instrument and effect plug-ins. Furthermore, EQ presets that you save in the **MixConsole** are listed. These presets contain all parameter settings for a particular plug-in. They can be used to apply sounds to instrument tracks and effects to audio tracks.

Strip Presets

> When this option is activated, the list shows all strip presets (file name extension `.strippreset`). These presets contain channel strip effect chains.

FX Chain Presets

When this option is activated, the list shows all effect chain presets (file name extension `.fxchainpreset`). These presets contain insert effect chains.

Video Files

When this option is activated, the list shows all video files.

Projects

When this option is activated, the list shows all project files (`.cpr`).

RELATED LINKS

Filtering According to Rating

With the **Rating Filter**, you can filter files according to their rating. This allows you to exclude files from the search according to their quality.

PROCEDURE

1. In the **Results** section of the **MediaBay**, drag the **Rating Filter** to the left or right.

2. To display all media files regardless of their rating, click the asterisk icon.

Performing a Text Search

You can perform a text search in the **Results** list. If you enter text in the text search field, only media files whose attributes match the entered text are displayed.

The **Search Results** field has the same function as the **matches** operator of the logical filter. However, the search is applied to all file attributes.

▪   Click in the field and enter the text that you want to find.

    For example, if you are looking for all audio loops relating to drum sounds, enter "drum" in the search field. The search results contain loops with names, such as "Drums 01", "Drumloop", "Snare Drum", etc. In addition, all media files with the **Drum&Percussion** category attribute or any other attribute that contains "drum" are found. You can also add apostrophes to find exact matches for the entered words and use boolean operators.

When you enter text in the field, its background becomes red, to indicate that a text search is active for the list.
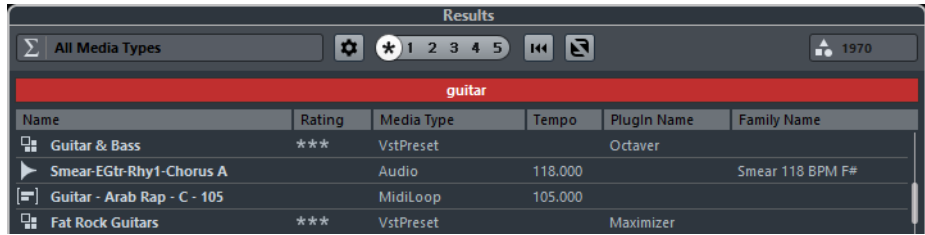
- To reset the text search, delete the text.

Resetting the Results List

You can reset all filter settings and filter results.

- To reset the **Results** list, click the **Reset Result Filter** button ▐◀◀ in the **MediaBay**.

Previewer Section

You can preview individual files in the **Previewer** section to find out which one to use in your project.

The elements visible in this section and their functions depend on the media type.

IMPORTANT

The **Previewer** section is not available for video files, project files, and audio track presets. You can preview track presets in the **Presets** browser.

NOTE

Some **MediaBay**-specific preferences affect the playback of media files.

RELATED LINKS
MediaBay Preferences on page 352

Previewing Audio Files

1) **Transport Controls**

Let you start, stop, pause, and cycle the preview.

2) **Preview Level Fader**

Lets you specify the preview level.

3) **Auto Play New Results Selection**

If this option is activated, the selected file is automatically played back.

4) **Align Beats to Project**

If this option is activated, the selected file is played back in sync with the project, starting at the project cursor position. Note that this can apply realtime time stretching to your audio file.

NOTE

If you import an audio file into your project for which **Align Beats to Project** is activated in the **Previewer**, **Musical Mode** is automatically activated for the corresponding track.

5) **Wait for Project Play**

If this option is activated, the play and stop functions from the **Transport** panel are synchronized with the play and stop buttons in the **Previewer** section.

To use this option to its full extent, set the left locator at the beginning of a bar, then start playing back the project using the **Transport** panel. The loops that you now select in the **Results** list will start together with the project in perfect sync.

Previewing MIDI Files

IMPORTANT

To preview a MIDI file, you must select an output device from the **Output** pop-up menu.

1) **Transport Controls**

Let you start and stop the preview.

2) **Preview Level Fader**

Lets you specify the preview level.

3) **Output**

Lets you select the output device.

4) **Auto Play New Results Selection**

If this option is activated, the selected file is automatically played back.

5) **Align Beats to Project**

If this option is activated, the selected file is played back in sync with the project, starting at the project cursor position. Note that this can apply realtime time stretching to your MIDI file.

NOTE

If you import a MIDI file into your project for which **Align Beats to Project** is activated in the **Previewer**, **Musical Mode** is automatically activated for the corresponding track.

Previewing MIDI Loops

NOTE

MIDI loops are always played back in sync with the project.

1) **Transport Controls**

Let you start and stop the preview.

2) **Preview Level Fader**

Lets you specify the preview level.

3) **Auto Play New Results Selection**

If this option is activated, the selected file is automatically played back.

4) **Link Playback to Chord Track**

If this option is activated, the events of the MIDI loop are transposed to play back in context with the chord track. Note that you need a chord track with chord events for this.

If this option is activated, and you insert a MIDI loop into the project, **Follow Chord Track** is automatically activated for the track.

Previewing VST Presets and Track Presets for MIDI and Instrument Tracks

To preview track presets for MIDI or instrument tracks and VST presets you need some MIDI notes. These notes can be sent to the track preset via MIDI Input, using a MIDI file, the **Memo Recorder** mode, or via the computer keyboard.

Virtual keyboard in keyboard display mode.

1) **Transport Controls**

   Let you start and stop the preview.

2) **Previewer Sequence Mode Menu**

   Lets you load a MIDI file to apply the currently selected preset to the MIDI file. You can also select the **Memo Recorder** mode that continually repeats a given sequence of notes as a loop.

3) **Preview Level Fader**

   Lets you specify the preview level.

4) **Virtual Keyboard**

   You can display the virtual keyboard in the keyboard display mode or in the piano display mode.

5) **Computer Keyboard Input**

   If this option is activated, you can use your computer keyboard to preview the presets.

RELATED LINKS
Previewing Presets Using the Memo Recorder Mode on page 349
Virtual Keyboard on page 143

Previewing Presets Via MIDI Input

MIDI input is always active, for example, when a MIDI keyboard is connected to your computer and set up properly, you can directly start playing the notes to preview the selected preset.

Previewing Presets Using a MIDI File

PROCEDURE

1. On the **Previewer Sequence Mode** pop-up menu, select **Load MIDI File**.
2. In the file dialog that opens, select a MIDI file and click **Open**.
   The name of the MIDI file is displayed on the pop-up menu.
3. Click the **Play** button to the left of the pop-up menu.

RESULT

The notes received from the MIDI file are played back with the settings of the track preset applied.

NOTE

The recently used MIDI files are kept on the menu, for quick access. To remove an entry from this list, select it on the menu and then select **Remove MIDI File**.

Previewing Presets Using the Memo Recorder Mode

The **Memo Recorder** mode continually repeats a given sequence of notes as a loop.

NOTE

You cannot use the **Memo Recorder** mode when previewing presets using a MIDI file.

PROCEDURE

1. On the **Previewer Sequence Mode** pop-up menu, select **Memo Recorder**.
2. Activate the **Play** button.
3. Play some notes on the MIDI keyboard or on the computer keyboard.

RESULT

The notes are played back with the preset settings applied.

When you stop playing notes and wait for 2 seconds, the note sequence that you played until this moment is played back in a continuous loop.

To use another sequence, start entering notes again.

Previewing Presets Via the Computer Keyboard

NOTE

If you activate the **Computer Keyboard Input** button, the computer keyboard is used exclusively for the **Previewer** section. However, you can still use the following key commands: [Ctrl]/[Command]-[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 the **Computer Keyboard Input** button.
2.   Play some notes on the computer keyboard.

Filters Section

With the **MediaBay**, you can perform very refined file searches.

About Attributes for Media Files

Attributes for media files are sets of meta data providing additional information on the file.

The different types of media files have different attributes. For example, `.wav` audio files have attributes like name, length, size, sample rate, etc., while `.mp3` files have additional attributes such as artist or genre.

Attribute Filter

Assigning attribute values to your files makes it easy to organize the media files. With the **Attribute** filter, you can view and edit some of the standard file attributes found in your media files.

The **Filters** section displays all values found for a specific attribute. Selecting one of these values displays a list of files that contain this attribute value.
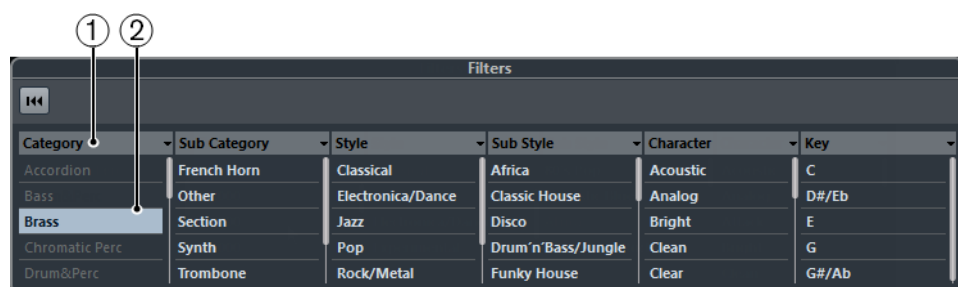
1) **Attribute columns**

   Let you select different attribute categories. If the columns are wide enough, the number of files that match this criteria is displayed to the right of the filter name.

2) **Attribute values**

   Displays the attribute values and how often a certain attribute value is available among your media files.

NOTE

- Some attributes are directly linked to each other. For example, for each category value, there are certain sub category values available. Changing the value in one of these attribute columns displays different values in the other column.

- Each attribute column displays only the attribute values found in the currently selected location.

Applying an Attribute Filter

With the **Attribute** filter you can quickly find audio files with certain attributes.

- To apply an **Attribute** filter, click on an attribute value.

  The **Results** list is filtered accordingly. Apply more attribute filters to restrict the result even more.

- To find files that match either one or the other attribute, [Ctrl]/[Command]-click different attribute values in the same column.

- To change the displayed attribute values of a column, click on the attribute column and select another attribute.

NOTE

Character attributes always form an AND condition.

Resetting the Filter

PROCEDURE

- To reset the filter, click the **Reset Filter** button at the top of the **Filters** section.
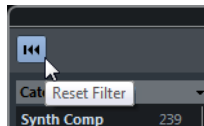
  This also resets the **Results** list.

Sound Browser and Mini Browser

The **Loop Browser** and **Sound Browser** show different views of the **MediaBay**.

The **Loop Browser** lets you quickly browse your loops, for example, audio files and MIDI loops.

The **Sound Browser** lets you quickly search sounds. By default, it is set to display track presets and plug-in presets.

These browser windows offer the same functions as the **MediaBay**, for example, you can specify different browse locations, define searches, set up the available panes, etc.

MediaBay Preferences

The **Preferences** dialog in Cubase contains a special **MediaBay** page where you can set up the **MediaBay**. These settings are also available from within the **MediaBay**.

- To display the preferences, click the **MediaBay Preferences** button in the lower left corner of the **MediaBay**.
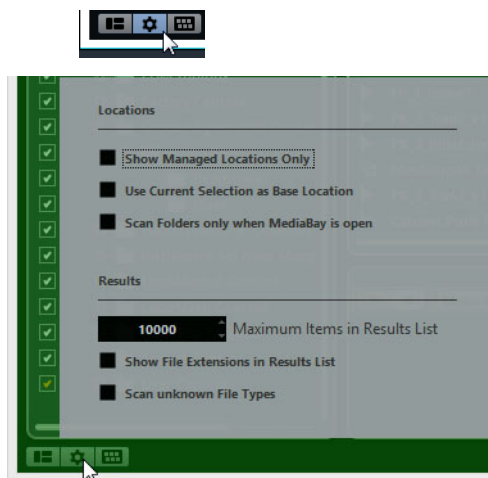
Show Managed Locations Only

If this option is activated, all folders that are not scanned for files are hidden. This keeps the tree view in the Define Locations section less cluttered.

Use Current Selection as Base Location

If this option is activated, only the selected folder and its subfolders are shown.

Scan Folders only when MediaBay is open

If this option is activated, Cubase only scans for media files when the **MediaBay** window is open.

If this is deactivated, the folders are scanned in the background even when the **MediaBay** window is closed. However, Cubase never scans folders while playing back or recording.

Maximum Items in Results List

Specifies the maximum number of files that are displayed in the **Results** list. This avoids unmanageably long lists of files.

NOTE

The **MediaBay** does not warn you if the maximum number of files has been reached. There might be situations where a certain file you are looking for cannot be found because the maximum number of files was reached.

Show File Extensions in Results List

If this option is activated, file name extensions are displayed in the **Results** list.

Scan unknown File Types

When scanning for media files, the **MediaBay** ignores files with an unknown file extension. If this option is activated, the **MediaBay** tries to open and scan any file in the search location and ignores those files that cannot be recognized.

MediaBay Key Commands

You can display the available **MediaBay** key commands from within the **MediaBay** window. This is useful if you want to get a quick overview over the assigned and the available **MediaBay** key commands.

- To open the key commands pane, click the **Key Commands** button in the lower left corner of the **MediaBay**.
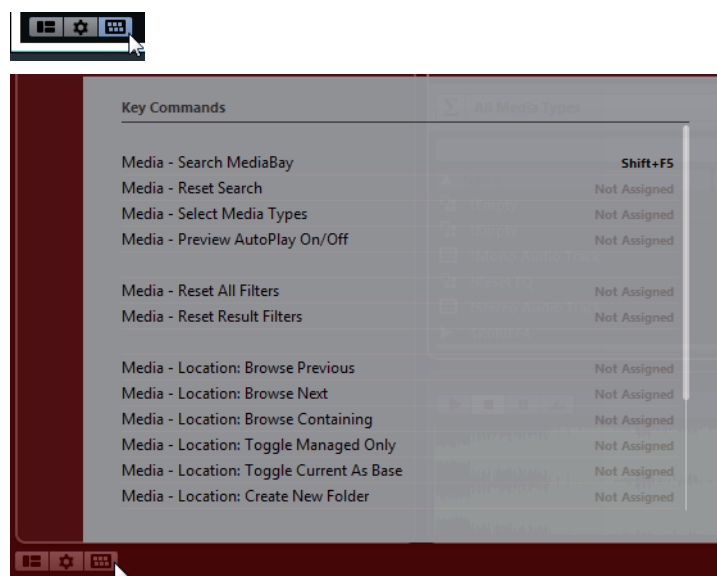
- To close the key commands pane, click anywhere outside of the pane.

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- To assign or modify a key command, click the corresponding key command.

RELATED LINKS

Working with MediaBay-Related Windows

The **MediaBay** concept can be found throughout the program, for example, when adding new tracks or when choosing presets for VST instruments or effects. The workflow in all **MediaBay**-related windows is the same as in the **MediaBay**.

Adding Tracks

If you add a track by selecting **Project > Add Track**, the following dialog opens:
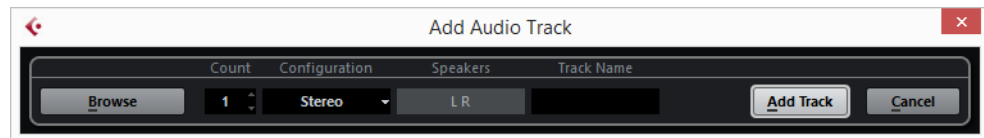
Click the **Browse** button to expand the dialog to show the **Results** list. Only file types that can be used in this context are shown.

Applying Effect Presets

If you have added an insert effect to a track, you can choose from a variety of presets via the **Results** browser for the effect slot.

PROCEDURE

1.   In the **Inserts** tab of the **Inspector**, click the **Select Preset** icon below the preset name.
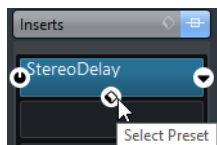
2.   In the **Results** browser, double-click a preset to apply it.

Applying Track Presets

You can choose from a variety of track presets.

PROCEDURE

1.   In the **Inspector**, click the **Preset Management** icon on the right of the **Inserts** tab.
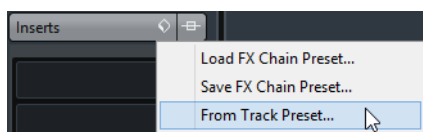
2.   Select **From Track Preset**.

3.   In the **Results** browser, double-click a track preset to apply it.

RELATED LINKS
Track Presets on page 101

Applying Instrument Presets

When working with VST instruments, you can choose from a variety of presets via the **Results** browser.

PROCEDURE

1.   In the track list, right-click the instrument track and select **Load Track Preset**.

2.   In the **Results** browser, double-click a preset to apply it.

Instrument Presets Results Browser

The **Results** browser for instrument track presets lets you preview VST presets and apply them to your instrument track.

To open the **Results** browser, right-click an instrument track, and select **Load Track Preset**.

VST presets for instruments can be divided into the following groups:

Presets

Presets contain the settings of the entire plug-in. For multi-timbral instruments, this means the settings for all sound slots as well as the global settings.

Programs

Programs contain only the settings for one program. For multi-timbral instruments, this means only the settings for one sound slot.

Working With Volume Databases

Cubase stores all media file information used in the **MediaBay**, such as paths and attributes, in a local database file on your computer. However, in some cases, it might be necessary to browse and manage this kind of metadata on an external volume.

For example, a sound editor might have to work both at home and in a studio, on two different computers. Therefore, the sound effects are stored on an external storage medium. To be able to connect the external device and directly browse its contents in the **MediaBay** without having to scan the device, you have to create a volume database for the external device.

Volume databases can be created for drives of your computer or for external storage media. They contain the same kind of information about the media files on these drives as the regular **MediaBay** database.

NOTE

When you launch Cubase, all available volume databases are automatically mounted. Databases that are made available while the program is running have to be mounted manually.

Rescanning and Refreshing Volume Databases

If you have modified the scan settings on a different system, you must rescan or refresh the **MediaBay**.

RELATED LINKS

Creating a Volume Database

PROCEDURE

▪   In the **Define Locations** section, right-click the external storage medium, drive, or partition of your computer system that you want to create a database for, and select **Create Volume Database**.
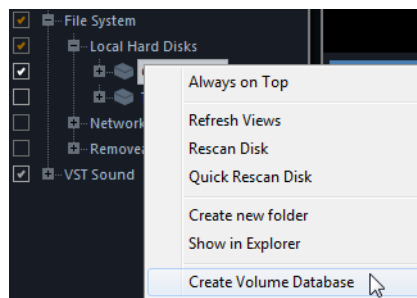
IMPORTANT

You must select the topmost level (root) for this. You cannot create a database file for a lower-level folder.

RESULT

The file information for this drive is written into a new database file. When the new database file is available, this is reflected by the symbol to the left of the drive name.
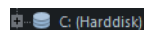
NOTE

If the drive contains a large amount of data, this process may take a while.

Volume databases are automatically mounted when Cubase is launched. They are shown in the **Define Locations** section and their data can be viewed and edited in the **Results** list.

Removing a Volume Database

If you have worked on another computer using an external hard disk and return to your own computer and connect the external device again as part of your system setup, you do not need a separate volume database for it any more. Any data on this drive can then be included in the local database file again, by removing the extra database file.

PROCEDURE

- In the **Define Locations** section, right-click the volume database and select **Remove Volume Database**

RESULT

The metadata is integrated in the local **MediaBay** database file and the volume database file is deleted.

NOTE

If the drive contains a large amount of data, this process may take a while.

Mounting and Unmounting Volume Databases

Volume databases that are made available while Cubase is running must be mounted manually.

- To mount a volume database manually, right-click the external storage medium, drive, or partition of your computer system that you want to mount and select **Mount Volume Database**.

- To unmount a volume database, right-click it and select **Unmount Volume Database**.

Automation

In essence, automation means recording the values for a particular MixConsole or effect parameter. When you create your final mix, Cubase can adjust this particular parameter control.

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. In 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 in a parameter value over time are reflected as curves on automation tracks.

There are two kinds of automation curves:

1)   **Ramp curves**

Ramp curves are created for any parameter that generates continuous multiple values, such as fader or encoder movements.

2)   **Jump curves**

Jump curves are created for on/off parameters such as mute.

Static Value Line

When you open an automation track for the first time, it does not contain any automation events. This is reflected in the event display as a straight horizontal black line, the static value line. This line represents the current parameter setting.

If you manually added any automation events or used write automation for the corresponding parameter and then disable the reading of automation data, the automation curve is grayed-out in the event display and the static value line is used instead.

As soon as **Read** is enabled, the automation curve becomes available.

Write/Read Automation

You can automation enable tracks and MixConsole channels by activating their automation write **W** and read **R** buttons.

- If you activate **W** for a channel, virtually all MixConsole parameters that you adjust during playback for that specific channel are recorded as automation events.

- If **R** is activated for a channel, all your recorded MixConsole actions for that channel are performed during playback.

The **R** and **W** buttons for a track in the track list are the same as the **R** and **W** buttons in the MixConsole.

NOTE

The **R** button is automatically enabled when you enable the **W** button. This allows Cubase to read existing automation data at any time. You can separately deactivate **W** if you only want to read existing data.

There are also global read and write indicator buttons **Activate/Deactivate Read/Write for All Tracks** on the MixConsole toolbar and at the top of the track list. These buttons light up as soon as there is an enabled **R** or **W** button on any channel/track within your project. Furthermore, they can be clicked to activate or deactivate the **R/W** buttons of all tracks simultaneously.

MIDI Part Data vs. Track Automation

You can enter or record MIDI controller data in two ways: 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.

Writing Automation Data

There are two approaches that you can use to create automation curves: manually and automatically.

- Manual writing makes it easy to quickly change parameter values at specific points without having to activate playback.

- Automatic writing lets you work almost as if you were using a real mixer.

With both methods, any applied automation data is reflected in both the MixConsole (a fader will move for example) and in the corresponding automation track curve.

RELATED LINKS

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.

1. In the track list, click **Show/Hide Automation** for a track to open its automation track.
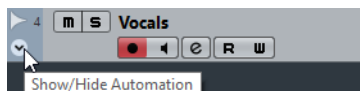
2. Click **W** to enable the writing of automation data on this track.

3. Start playback.

4. Adjust the parameters in the **MixConsole**, in the **Channel Settings** window, or in the effect control panel.

    The value settings are recorded and displayed as a curve on the automation tracks. When automation data is being written, the color of the automation track changes to red and the delta indicator in the automation track shows the relative amount by which the new parameter setting deviates from any previously automated value.

5. Stop playback and return to the position where you started playback.

6. Click **W** to disable the writing of automation data.

7. Start playback.

All actions that you recorded are reproduced exactly. When you drag a plug-in to a different insert slot on the same channel, any existing automation data moves with the plug-in. When you drag it to an insert slot on a different channel, any existing automation data is not transferred to the new channel.

Manual Writing of Automation Data

You can add automation events manually by drawing automation curves on an automation track.

1. In the track list, click **Show/Hide Automation** for a track to open its automation track.
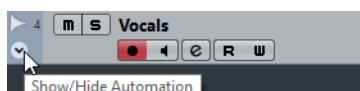
2. Click the automation parameter name and select the parameter from the pop-up menu.

3. Select the **Draw** tool.

4. Click on the static value line.

   An automation event is added, read automation mode is automatically activated, and the static value line changes to a colored automation curve.

5. Click and hold to draw a curve by adding many automation events.

   When you release the mouse button, the number of automation events is reduced.

   NOTE

   To adjust the thinning out of events, select **File > Preferences > Editing** and change the **Automation Reduction Level**.

6. Start playback.

RESULT

The automated parameter changes with the automation curve, and the corresponding fader in the MixConsole moves accordingly.

AFTER COMPLETING THIS TASK

Repeat the procedure if you are not happy with the result. If you draw over existing events, a new curve is created.

Tools for Drawing Automation Data

Apart from the **Draw** tool, you can use the following tools to draw automation events:

- **Object Selection** tool

  If **R** is activated and you click on an automation track with the **Object Selection** tool, you can add automation events.

  NOTE

  Events that are introduced between two existing events that do not deviate from the existing curve are removed as soon as you release the mouse button.

To activate the **Line** tool in any other available mode, click the **Line** tool and click again to open a pop-up menu where you can select the mode.
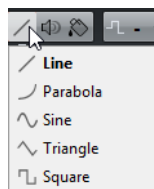
The following **Line** tool modes are available:

Line mode

If you click on the automation track and drag with the **Line** tool in **Line** mode, you can create automation events in a line. This is a quick way to create linear fades, etc.

Parabola mode

If you click and drag on the automation track with the **Line** tool in **Parabola** mode, you can create more natural curves and fades.

NOTE

The result depends on the direction from which you draw the parabolic curve.

Sine, Triangle, or Square mode

If you click and drag on the automation track with the **Line** tool in **Sine**, **Triangle**, or **Square** mode and snap to grid is activated, the period of the curve (the length of one curve cycle) is determined by the grid setting. If you press [Shift] and drag, you can set the period length manually, in multiples of the grid value.

NOTE

The **Line** tool can only be used for ramp type automation curves.

Editing Automation Data

Automation events can be edited much like other events.

You can cut, copy, paste, and nudge events, etc.

- If you move an event or part on a track and you want the automation events to follow automatically, select **Edit > Automation follows Events**.

  All automation events for the track between the start and end of the event or part are moved. Any automation events at the new position are overwritten.

Selecting Automation Events

- To select an automation event, click it with the **Object Selection** tool.

  The event turns black, and you can drag it in any direction between two events.

- To select multiple events, [Shift]-click the events or drag a selection rectangle with the **Object Selection** tool.

  All events inside the selection rectangle are selected and the automation track editor becomes available.

- To select all automation events on an automation track, right-click the automation track and select **Select All Events** from the context menu.

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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.

Adjusting Automation Ramp Curves

You can adjust automation ramp curves in the automation track editor.

- To open the automation track editor, activate the **Object Selection** tool and drag a selection rectangle on a ramp type automation track.

On the borders of the automation track editor, smart controls for specific editing modes are displayed:
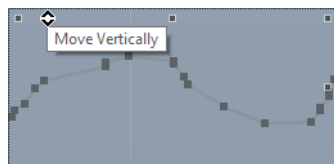
- To move the entire curve up or down, click in an empty area on the upper border of the editor. This is useful to boost or attenuate a curve.
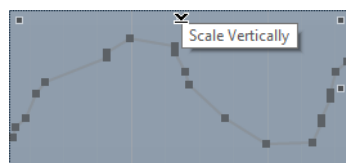
- To raise or lower the values in relative amounts, click in the middle of the upper border of the editor.
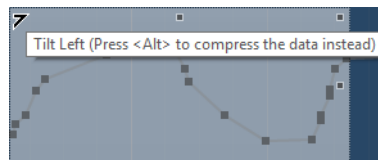
- To tilt the left or the right part of the curve, click in the upper left or right corner of the editor. This is useful if the curve form is exactly the way that you want it, but the start or end needs to be boosted or attenuated a bit.

- To compress the left or the right part of the curve instead, [Alt]/[Option]-click in the upper left or right corner of the editor.

Scale Around Absolute Center (Press <Alt> to scale around relative center)
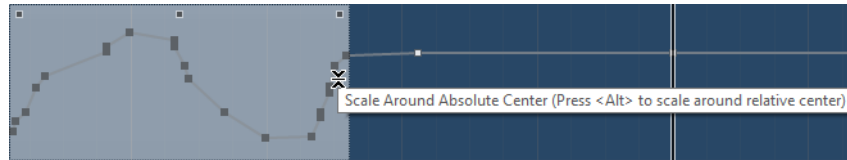
- To scale the curve around the absolute center, for example, horizontally around the center of the editor, click in the middle of the right border of the editor.

- To scale the curve relative to its center instead, [Alt]/[Option]-click in the middle of the right border of the editor.
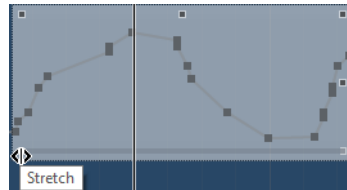
Stretch

- To stretch the selected curve, click and drag in the lower part of the editor.

  [Shift]-click on any of the smart controls to scale vertically.

- To scale the automation curves on several tracks at the same time, drag a selection rectangle across the corresponding automation tracks, hold down [Ctrl]/[Command], and use the scaling smart controls.

- To move the whole selection up/down or left/right, click inside the editor and drag.

- To restrict the direction to horizontal or vertical movement, press [Ctrl]/[Command] and drag.

NOTE

Snap is taken into account when moving automation curves horizontally.

Automation Tracks

Most of the tracks in your project have automation tracks, one for each automated parameter.

Automation tracks are hidden by default.

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, select **File > Preferences > Editing** and activate **Show Automation Track in Project on Writing Parameter**.

Removing Automation Tracks

- To remove an automation track together with all automation events, click the parameter name and from the pop-up menu, select **Remove Parameter**.

- To remove all automation tracks from a track that do not contain automation events, select **Remove Unused Parameters** from any of its automation parameter name pop-up menus.

- To remove automation tracks, you can also select **Project > Automation Panel > Functions** and select one of the options to delete automation.

Assigning a Parameter to an Automation Track

Default parameters are already assigned to automation tracks when you open them, according to their order in the parameter list.

PROCEDURE

1. Open an automation track and click on the automation parameter name.
   A parameter list is shown. The contents depend on the track type.
2. From the pop-up menu, select the parameter or select **More** to open the **Add Parameter** dialog that lists all parameters that can be automated, and select the parameter there.
3. Select the Parameter.
   The parameter replaces the current parameter in the automation track.

   NOTE

   The replacing of the automation parameter is non-destructive. If the automation track contains any automation data for the parameter that you just replaced, this data is there, although it is not visible. By clicking on the automation parameter name in the track list, you can switch back to the replaced parameter. On the pop-up menu, all automated parameters are indicated by an asterisk (*) after the parameter name.

Muting Automation Tracks

By muting an automation track you turn off automation for a single parameter.

- To mute individual automation tracks, click their **Mute** buttons in the track list.

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VST Instruments

VST instruments are software synthesizers or other sound sources that are contained within Cubase. They are played internally via MIDI. You can add effects or EQ to VST instruments.

Cubase allows you to make use of VST instruments in the following ways:

- By adding an instrument in the **VST Instruments** window (not in Cubase LE).

  This creates a VST instrument channel, which can be played by one or several MIDI tracks routed to it.

- By creating an instrument track.

  This is a combination of a VST instrument, an instrument channel, and a MIDI track. You play and record MIDI note data directly for this track.

VST Instruments Window

The **VST Instruments** window allows you to add VST instruments for MIDI and instrument tracks, giving you an overview of all instruments used in a project. It also offers you access to 8 quick controls for each added instrument.

IMPORTANT

In Cubase LE, the **VST Instruments** window is not available. Only instrument tracks and the related functions can be used in this program version.

To open the **VST Instruments** window, select **Devices > VST Instruments**.
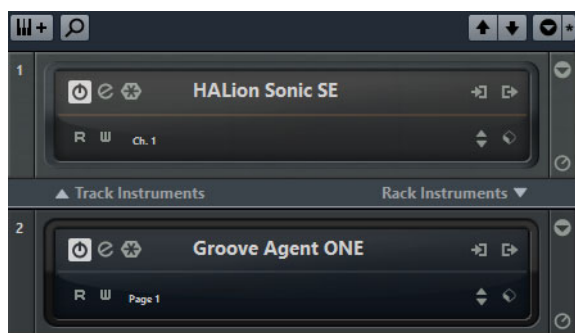
The following controls can be found in the **VST Instruments** window:

1) **Add Track Instrument**

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

2) **Find Instruments**

Opens a selector that allows you to find an instrument in the **VST Instruments** window.

3) **Set Remote-Control Focus for VST Quick Controls to Previous/Next Instrument**

Shows and activates the quick controls for the next/previous instrument in the **VST Instruments** window.

4) **Show/Hide all VST Quick Controls**

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

5) **Settings**

Opens the **Settings** menu, where you can activate/deactivate the following modes:

Show VST Quick Controls for One Slot Only shows the VST Quick Controls exclusively for the selected instrument.

MIDI Channel follows track selection ensures that the **Channel** selector follows the MIDI track selection in the **Project** window. Use this if you work with multitimbral instruments.

Remote-Control Focus for VST Quick Controls follows track selection ensures that the VST Quick Control remote-control focus follows the track selection.

The following controls are available on each instrument:

1) **Activate Instrument**

Activates/Deactivates the instrument.

2) **Edit Instrument**

Opens the instrument panel.

3) **Freeze Instrument**

Freezes the instrument. This allows you to save CPU power.

4) **Instrument Selector**

Allows you to select another instrument. Double-click to rename the instrument. The name is shown in the **VST Instruments** window in the **Output Routing** pop-up menu for MIDI tracks. This is useful when you work with several instances of the same instrument.

5) **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).

6) **Activate Outputs**

Allows you to activate one or more outputs for the instrument.

7) **Preset Browser**

Allows you to load or save an instrument preset.

8) **Load Previous/Next Program**

Allows you to load the previous/next program.

9) **Select Quick Control Layer**

Allows you to select a program.

10) **Read/Write Automation**

Allows you to read/write automation for the instrument parameter settings.

The following controls are available on each rack:
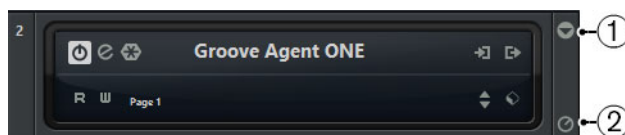
1) **Show/Hide VST Quick Controls**

Allows you to show/hide the VST Quick Controls for the instrument.

2) **Set Remote-Control Focus for VST Quick Controls**

Allows you to activate the VST Quick Controls to remote-control the instrument.

VST Instruments Window Context Menu

The following functions are available in the **VST Instruments** window context menu:

Always on Top

If this option is activated, the **VST Instruments** window is always on top.

Add Track Instrument

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

Add Rack Instrument

Opens a selector that allows you to add a VST instrument.

Instruments Context Menu

The following functions are available in the instruments context menu:

Copy/Paste instrument Setting

Allows you to copy the instrument settings and paste them to another instrument.

Load/Save Preset

Allows you to load/save an instrument preset.

Default Preset

Allows you to define and save a default preset.

Switch to B Setting

Activates the setting B.

Copy A to B

Copies the effect parameters of effect setting A to effect setting B.

Activate Outputs

Allows you to activate one or more outputs for the instrument.

Remote Control Editor

Opens the **Remote Control Editor**.

Adding VST Instruments

PROCEDURE

1. On the **Devices** menu, select **VST Instruments**.
2. Right-click on an empty area of the **VST Instruments** window.
3. From the context menu, select one of the following:
    ▪   **Add Track Instrument**
    ▪   **Add Rack Instrument**
4. From the instrument selector, select an instrument.
    ▪   Click **Add Track**, if you chose to add a track instrument.
    ▪   Click **Create**, if you chose to add a rack instrument.

RESULT

If you chose **Add Track Instrument**, the instrument control panel opens, and an instrument track with the name of the instrument is added to your project.

If you chose **Add Rack Instrument**, the instrument control panel opens, and the following tracks are added to the track list:

- A MIDI track with the name of the instrument. The output of the MIDI track is routed to the instrument.

  NOTE

  In the **Preferences** dialog (**VST–Plug-ins** page), you can specify what happens when you load a VST instrument.

- A folder with the name of the instrument that is added within a **VST Instruments** folder. The instrument folder contains two automation tracks: one for the plug-in parameters, and one for the synth channel in the **MixConsole**.

Presets for Instruments

You can load and save presets for instruments. These contain all the settings that are required for the sound that you want.

The following presets for instruments are available:

- **VST presets** include the parameter settings of a VST instrument.

  These are available from the **VST instruments** window, from the instrument control panels, and from the **Programs** field in the Inspector.

- **Track presets** include the instrument track settings and the settings for the corresponding VST instrument.

  These are available from the Inspector or the track list context menu.

Loading VST Presets

You can load **VST presets** from the **VST instruments** window, from the instrument panel, or from the Inspector.

PROCEDURE

1. Do one of the following:
   - Select the track that contains the VST instrument and in the **Inspector**, click the **Programs** field.
   - In the **VST Instruments** window, click the **Preset Browse**r button for the instrument, and select **Load Preset**.
   - In the control panel for the VST instrument, click the **Preset Browser** button, and select **Load Preset**.

2.   In the preset browser, select a preset from the list and double-click it to load it.

RESULT

The preset is applied. To return to the previously loaded preset, open the preset browser again and click **Revert to Last Setting**

Saving VST Presets

You can save your settings on VST instruments as VST presets for further use.

PROCEDURE

1.   Do one of the following:
     ▪   In the **VST Instruments** window, click the **Preset Browse**r button for the instrument, and select **Save Preset**.
     ▪   In the control panel for the VST instrument, click the **Preset Browser** button, and select **Save Preset**.
2.   In the **Save <VST instrument name> Preset** dialog, enter a name for the preset.
3.   Optional: Click **Show Attribute Inspector** and define attributes for the preset.
4.   Click **OK** to save the preset and close the dialog.

Loading Track Presets

You can load track presets for instrument tracks from the Inspector.

PROCEDURE

1.   Do one of the following:
     ▪   Select the instrument track and in the Inspector, click the **Load Track Preset** field.
     ▪   Right-click the instrument track and from the context menu, select **Load Track Preset**.
2.   In the preset browser, select a preset from the list and double-click it to load it.

RESULT

The track preset is applied. To return to the previously loaded preset, open the preset browser again and click **Revert to Last Setting**.

Saving Track Presets

You can save your settings on instrument tracks as Track presets for further use.

PROCEDURE

1. Do one of the following:
   - Select the instrument track and in the Inspector, click the **Save Track Preset** button.
   - 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.

VST Quick Controls

VST Quick Controls allow you to remote-control a VST instrument from within the **VST Instruments** window.

To show the VST Quick Controls on the **VST Instruments** window, activate the **Show/Hide all VST Quick Controls** button.

Connecting Quick Controls with Remote Controllers

Quick Controls become powerful when used in combination with a remote controller.

PREREQUISITE

Your remote device is connected to Cubase via MIDI.

PROCEDURE

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

2. In the **Devices** list, select **Track Quick Controls** or **VST Quick Controls**.
   This opens the respective section on the right.

3. From the **MIDI Input** pop-up menu, select the MIDI port on your computer.
   If your remote controller has its own MIDI input and supports MIDI feedback, you can connect your computer to the device input. Select the corresponding MIDI port in the **MIDI Output** pop-up menu.
   Alternatively, you can select **All MIDI Inputs**.

4. Click **Apply**.

5. Activate **Learn**.

6.   In the **Control Name** column, select **QuickControl 1**.

7.   On your remote control device, move the control that you want to use for the first quick control.

8.   Select the next slot in the **Control Name** column and repeat the previous steps.

9.   Click **OK**.

> NOTE
>
> In addition to using the Learn function to set up the table in the **Quick Controls** section, you can modify the values manually. The available options are identical to the ones available for the Generic Remote device.

RESULT

The quick controls are now associated with control elements on your external remote controller. If you move a control element, the value of the parameter that is assigned to the corresponding Quick Control changes accordingly.

The remote controller setup for Quick Controls is saved globally, that is, it is independent of any projects. If you have various remote controllers, you can save and load several Quick Control setups using the **Export** and **Import** buttons.

RELATED LINKS

Activating Pick-up Mode for Hardware Controls

Pick-up Mode allows you to change configured Quick Control parameters without accidentally modifying their previous values.

Often, the parameter settings of your Quick Controls are initially different from the settings of your hardware controls, for example, when the hardware controls control, different Quick Controls on different tracks. In this case, you will notice that moving a hardware control changes the previous value of a parameter in a way that it is initially set to the zero position, before it is changed. Thus, you always lose your previous setting of the parameter.

To avoid this, you can activate **Pick-up Mode**. This has the effect that when you move your hardware control, you can only change the parameter once the control reaches the parameter's previous value. The control "picks up" the parameter at the value to which it was last set.

> NOTE
>
> This only applies to hardware controllers whose controls use specific ranges.

PROCEDURE

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

2.   In the **Devices** list, select **Track Quick Controls** or **VST Quick Controls**.

3. Activate **Pick-up Mode**.

4. Click **OK**.

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 the **Monitor** button for the track that has the VST instrument loaded.

2. Press one or more keys on your MIDI keyboard or use the virtual keyboard.

    The corresponding sounds are triggered on your VST instrument.

3. Select **Devices > MixConsole** to open the **MixConsole** and adjust the sound, add EQ or effects, assign another output routing, etc.

VST Instruments and Processor Load

VST instruments can consume a lot of CPU power. The more instruments you add, the more likely you will run out of processor power during playback.

If the CPU overload indicator in the **VST Performance** window lights up or you get crackling sounds, you have the following options:

▪   Activate **Freeze** for instruments.

    This renders the instrument into an audio file and unloads it.

▪   Activate **Suspend VST3 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

If you are using a moderately powerful computer or a large number of VST instruments, your computer may not be able to play back all instruments in realtime. At this point, you can freeze instruments.

PROCEDURE

1. Do one of the following:
    - Select **Devices > VST Instruments**.
    - Select the instrument track and open the top **Inspector** tab.

2. Click the **Freeze** button.

3. In the **Freeze Instrument Options** dialog, make your settings.

4. Click **OK**.

RESULT

- The instrument is rendered to an audio file and on playback you hear the same sound as before freezing.

- Less CPU load is used.

- The **Freeze** button lights up.

- The MIDI/instrument track controls are grayed out.

- The MIDI parts are locked.

NOTE

To edit the tracks, parameters, or synth channels again, and to delete the rendered file, unfreeze the instrument by clicking the **Freeze** button again.

Freeze Instrument Options

The **Freeze Instrument Options** dialog opens when you click the **Freeze** button. It allows you to specify exactly what should happen, if you freeze an instrument.

The following controls can be found in the **Freeze Instrument Options** dialog:

Freeze Instrument Only

Activate this option if you still want to be able to edit insert effects on the synth channel after freezing the instrument.

Freeze Instrument and Channels

Activate this option if you do not need to edit the insert effects on your synth channels.

NOTE

You can still adjust level, pan, sends, and EQ.

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Tail Size

Allows you to set a Tail Size time to let sounds complete their normal release cycle.

Unload Instrument when Frozen

Activate to unload the instrument after freezing. This makes the RAM available again.

About Latency

The term latency stands for the time it takes for the instrument to produce a sound when you press a key on your MIDI controller. It can be an issue when using VST instruments in realtime. Latency depends on your audio hardware and its ASIO driver.

In the **Device Setup** dialog (**VST Audio System** page), the input and output latency values should ideally be a few milliseconds.

If the latency is too high to allow comfortable realtime VST instrument playback from a keyboard, you can use another MIDI sound source for live playback and recording, and switch to the VST instrument for playback.

RELATED LINKS
Selecting a Driver on page 9

Delay Compensation

During playback Cubase automatically compensates any delay inherent in the VST plug-ins you use.

You can specify a Delay Compensation Threshold in the **Preferences** dialog (**VST** page) so that only plug-ins with a delay higher than this threshold setting are affected.

Constrain Delay Compensation

To avoid Cubase to add latency when you play a VST instrument in realtime or record live audio, you can activate **Constrain Delay Compensation**. This minimizes the latency effects of the delay compensation, while maintaining the sound of the mix as far as possible.
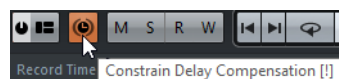
The Constrain Delay Compensation function is available on the toolbar and in the **MixConsole** on the **Functions** menu.

Activating **Constrain Delay Compensation** turns off VST plug-ins which are activated for VST instrument channels, audio track channels that are record enabled, group channels, and output channels. VST plug-ins which are activated for FX channels are disregarded. After recording or using a VST instrument **Constrain Delay Compensation** should be deactivated again in order to restore full delay compensation.

Import and Export Options

Importing MIDI Loops

You can import MIDI loops (file extension .midiloop) in Cubase. These files contain MIDI part information (MIDI notes, controllers, etc.) and all the settings that are saved in instrument track presets. This way, you can reuse instrument patterns in other projects or applications, for example.

PROCEDURE

1. Select **Media > MediaBay**.

2. Optional: In the **Results** section, open the **Select Media Types** menu, and activate **MIDI Loops** and **Plug-in Presets**.
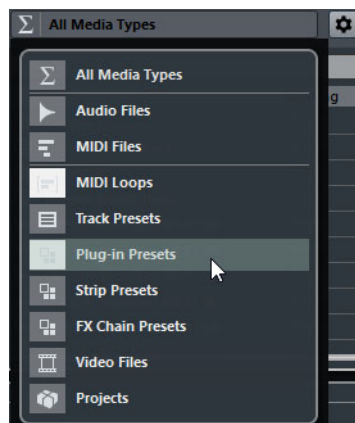
3. In the results list, select a MIDI loop and drag it to an empty section in the **Project** window.

RESULT

An instrument track is created and the instrument part is inserted at the position where you dragged the file. The **Inspector** reflects all settings that are saved in the MIDI loop, for example, the VST instrument that was used, applied insert effects, track parameters, etc.

NOTE

You can also drag MIDI loops onto existing instrument or MIDI tracks. However, this only imports the part information. This means this part only contains the MIDI data (notes, controllers) that is saved in the MIDI loop, but no inspector settings or instrument parameters.

Exporting MIDI Loops

You can export MIDI loops to save a MIDI part together with its instrument and effect settings. This allows you to reproduce patterns that you created without having to search for the correct sound, style, or effect.

PROCEDURE

1.   Select an instrument part.

2.   Select **File > Export > MIDI Loop**.
      A file dialog opens.

3.   In the **New MIDI Loop** section, enter a name for the MIDI loop.

4.   Optional: To save attributes for the MIDI loop, click the button below the **New MIDI Loop** section at the bottom left.
      The **Attribute Inspector** section opens, allowing you to define attributes for your MIDI loop.

5.   Click **OK** to close the dialog and save the MIDI loop.

RESULT

MIDI Loop files are saved in the following folder:

Windows: `\Users\<user name>\AppData\Roaming\Steinberg\MIDI Loops`

Mac: `/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 the **New Folder** button in the **Save MIDI Loop** dialog.

Exporting Instrument Tracks as MIDI File

You can export instrument tracks as standard MIDI files.

NOTE

As there is no MIDI patch information in an instrument track, this information is missing in the resulting MIDI file.

NOTE

If you activate **Export Inspector Volume/Pan**, volume and pan information of the VST instrument are converted and written into the MIDI file as controller data.

RELATED LINKS
Exporting MIDI files on page 622

Installing and Managing Plug-ins

Installing VST plug-ins

Cubase supports the VST 2 and VST 3 plug-in standards. You can install effects and instruments that comply with these formats.

A plug-in is a piece of software that adds a specific functionality to Cubase. The audio effects and instruments that are used in Cubase are VST plug-ins.

NOTE

If an effect or instrument plug-in has its own installation application, you should use this. Dragging an already installed plug-in to a different location may lead to problems. As a general rule, always read the documentation or readme files before installing new plug-ins.

Cubase comes with a number of effect plug-ins included. These effects and their parameters are described in the separate PDF document Plug-in Reference.

Installing VST 3 Plug-ins on Mac OS X Systems

To install a VST 3.x plug-in on a Mac OS X system, quit Cubase and drag the plug-in file into one of the following folders:

- /Library/Audio/Plug-Ins/VST3/

    This is only possible if you are the system administrator. Plug-ins that are installed in this folder are available to all users, for all programs that support VST 3.

- /Users/<user name>/Library/Audio/Plug-Ins/VST3/

    <user name> is the name you use to log on to the computer. The easiest way to open this folder is to open your `Home` folder and use the path `/Library/Audio/Plug-Ins/VST3/` from there. Plug-ins that are installed in this folder are only available to you.

When you scan for newly installed plug-ins, or relaunch Cubase, the new effects appear on the effect selectors. In the VST 3 protocol, the effect category, subfolder structure, etc. are built-in and cannot be changed. Therefore, you find the effects in the corresponding category folders.

Installing VST 2 Plug-ins on Mac OS X Systems

To install a VST 2.x plug-in on Mac OS X systems, quit Cubase and drag the plug-in file to one of the following folders:

- Library/Audio/Plug-Ins/VST/

   This is only possible if you are the system administrator. Plug-ins that are installed in this folder are available to all users, for all programs that support VST 2.x.

- user name>/Library/Audio/Plug-Ins/VST/

   <user name> is the name you use to log on to the computer. The easiest way to open this folder is to go to your `Home` folder and use the path `/Library/Audio/Plug-Ins/VST/` from there. Plug-ins that are installed in this folder are only available to you.

When you scan for newly installed plug-ins, or relaunch Cubase, the new effects appear on the effect selectors.

Installing VST 3 Plug-ins on Windows Systems

On Windows systems, VST 3 plug-ins are installed by dragging the files with the extension .vst3 into the `VST3` folder in the Cubase application folder. When you scan for newly installed plug-ins, or relaunch Cubase, the new effects appear on the effect selectors. In the VST 3 protocol, the effect category, subfolder structure, etc. are built-in and cannot be changed. Therefore, you find the new effects in the corresponding category folders.

Installing VST 2 Plug-ins on Windows Systems

On Windows systems, VST 2.x plug-ins are installed by dragging the files with the extension .dll into the `Vstplugins` folder in the Cubase application folder, or into the `Shared VST Plug-ins` folder (Windows 32 bit only). When you scan for newly installed plug-ins, or relaunch Cubase, the new effects appear on the effect selectors.

Plug-in Manager

The **Plug-in Manager** provides lists of the effects and VST instruments that are installed on your computer. These lists are used in the selectors for VST instruments and effects.

The **Plug-in Manager** allows you to do the following:

- You can view lists of all effects and VST instruments that are loaded by Cubase when you launch the program.

The lists of all effects or VST instruments are created automatically every time you start Cubase. You can also initiate a rescan at any time. This ensures that these lists are always up-to-date.

▪ You can create your own lists of effects or instruments for use in the selectors for effects or instruments. User-defined lists are called collections.

Collections allow you to create sub-sets of the available effects or instruments, for example, to give you a better overview of the effects used in a project.

NOTE

If an installed effect or instrument cannot be loaded by Cubase, it does not appear in the list of all effects or instruments. Also, the effect or instrument is grayed out in any collections in which it is included. For example, this can happen if a copy-protection dongle required to run the effect or instrument is missing, or after deinstallation of a plug-in.

Plug-in Manager Window

You can manage your effects and VST instruments in the **Plug-in Manager** window.

▪ To open the **Plug-in Manager** window, select **Devices > Plug-in Manager**.
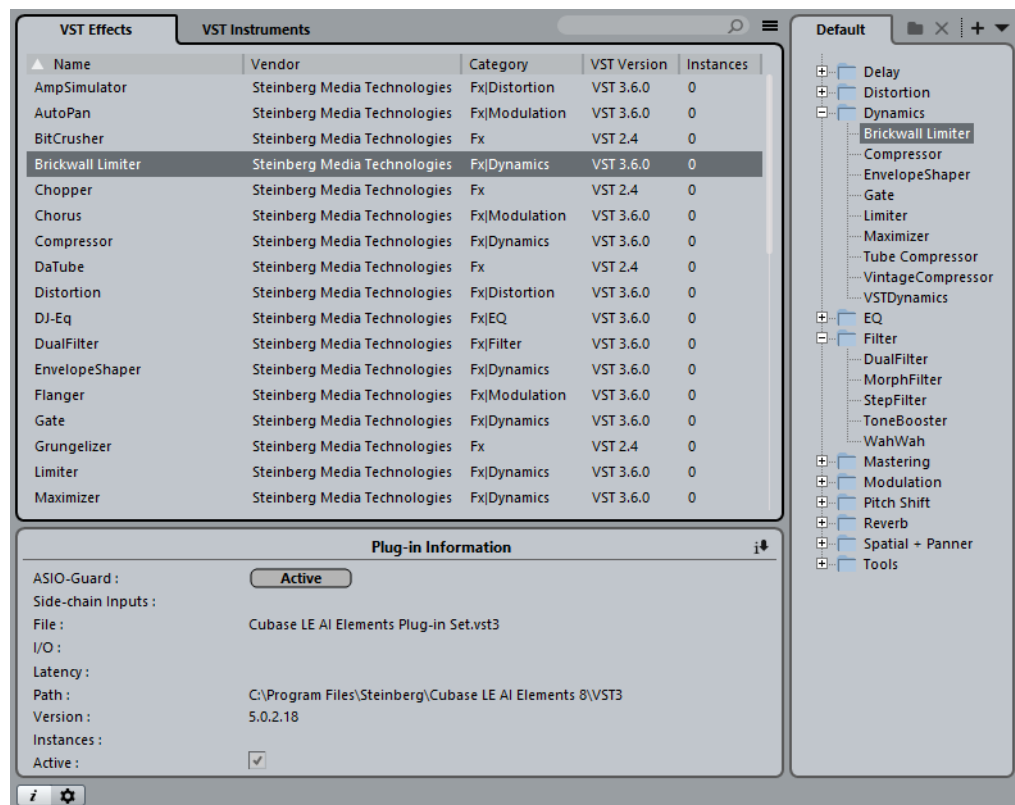
The **Plug-in Manager** window shows the following:

VST Effects/VST Instruments

Open these tabs to see lists of all VST effects and VST instruments that were loaded by Cubase when you launched the program.

Collection list

By default, the window section to the right shows the **Default** collection, which contains all effects or VST instruments currently loaded by the program. The **Default** collection cannot be changed.

You can compile your own collections of effects or VST instruments by clicking **New Collection** and dragging and dropping items from the list of all effects or VST instruments to the collection list.

Collections are shown in the selectors for effects/VST instruments, and all changes made to collections in the **Plug-in Manager** are immediately reflected in the selectors.

Enter the name of a plug-in in the search field. The list of all effects or VST instruments is filtered to show only those plug-ins whose names contain the text that you entered.

The **Toggle list to show all/show only FX/VSTi not in current collection** button allows you to filter the lists of all effects or VST instruments to show either all loaded plug-ins, or only those that are not part of the current collection.

The **New Folder** button allows you to create a new folder in the current collection.

The **Delete** button allows you to delete the selected item in the current collection.

The **New Collection** button allows you to create a new collection.

To create a new, empty list, select **Empty**. To create a new collection based on the list of all effect, select **Add All Plug-ins**. To create a new collection based on the current collection, select **Add Current Collection**.

The **User Collections** drop-down menu allows you to select a different collection, and to rename or delete the current collection.

To remove unavailable plug-ins from all collections, select **Remove Unavailable Plug-ins from All Collections**.

The **Show Plug-in Information** button opens a section at the bottom of the window in which more information about the selected item is shown. If you select several plug-ins, the information for the plug-in that you have selected first is shown. In this section, you can also deactivate selected plug-ins. Deactivated plug-ins are no longer available in collections. This is useful if you have plug-ins installed that you do not want to use in Cubase.

The **Plug-in Manager Settings** button opens a section at the bottom of the window in which all current paths to VST 2 plug-ins are listed. You can add or remove folder locations by using the corresponding buttons. Click **Rescan All** to rescan your computer for plug-ins.

RELATED LINKS

Compiling a New Effects Collection

You can create a new collection of effects or VST instruments for use in the plug-in selectors.

PREREQUISITE

A number of effect plug-ins is correctly installed on your computer, and these plug-ins are listed on the **VST Effects** tab of the **Plug-in Manager** window.

PROCEDURE

1. In the **Plug-in Manager** window, click the **New Collection** button and do one of the following:
    ▪   To create a new collection based on the list of all effects, select **Add All Plug-ins**.
    ▪   To create a new collection based on the current collection, select **Copy Current Collection**.

2. Enter a name for the new collection and click **OK**.

3. Drag items from the list of all effects and drop them to the new collection. A blue line indicates the drop position.
    ▪   Click the **New Folder** button to create folders and place items directly in them.
    ▪   You can drag items to new positions within the collection.
    ▪   Drag items from the collection list to the list of all plug-ins to delete them, or select items and click **Delete**.

RESULT

The new collection is saved automatically.

The procedure is the same for compiling collections of VST instruments.

In the plug-in selectors, found, for example, in the **Project window > track inspector > Inserts** tab, collections are available as tabs at the top of the selector.

Remote controlling Cubase

It is possible to control Cubase via MIDI.

A large number of MIDI control devices is supported. This chapter describes how to set up Cubase for remote control. The supported devices are described in the separate PDF document "Remote Control Devices".

There is also a Generic Remote Device option, allowing you to use any MIDI controller to remote control Cubase.

RELATED LINKS

Setting Up

Connecting the remote device

Connect the MIDI output on the remote unit to a MIDI input on your MIDI interface. Depending on the remote unit model, you may also need to connect a MIDI Out on the interface to a MIDI In on the remote unit (this is necessary if the remote unit features "feedback devices" such as indicators, motorized faders, etc.).

If you are recording MIDI tracks, you do not want any MIDI data from the remote unit to be accidentally recorded as well. To avoid this, you should make the following setting:

PROCEDURE

1. Open the Device Setup dialog from the Devices menu.
2. Select "MIDI Port Setup" in the list on the left.
3. Check the table on the right and locate the MIDI input to which you have connected the MIDI remote unit.
4. Deactivate the checkbox in the "In 'All MIDI Inputs'" column for that input, so that the State column reads "Inactive".
5. Click OK to close the Device Setup dialog.

RESULT

Now you have removed the remote unit input from the "All MIDI Inputs" group. This means that you can record MIDI tracks with the "All MIDI Inputs" port selected without risking to record the data from the remote unit at the same time.

Selecting a remote device

PROCEDURE

1. Open the Device Setup dialog from the Devices menu.

2. If you cannot find the remote device you are looking for, click on the plus sign in the top left corner and select the device from the pop-up menu.
    The selected device is added to the Devices list.

NOTE

Note that it is possible to select more than one remote device of the same type. If you have more than one remote device of the same type, these will be numbered in the Devices list. For example, to be able to use a Mackie Control Extender, you must install a second Mackie control device.

3. Select your MIDI control device model from the Devices list.
    Depending on the selected device, either a list of programmable function commands or a blank panel is shown in the right half of the dialog window.
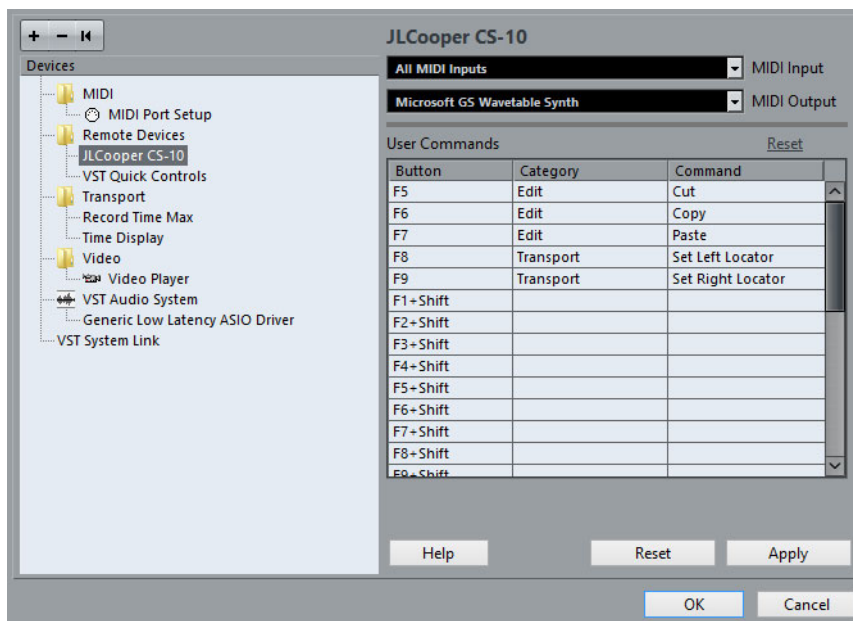
4. Select the correct MIDI input from the pop-up menu.
    If necessary, select the correct MIDI output from the pop-up menu.

5. Click OK to close the dialog.

You can now use the MIDI control device to move faders and knobs, activate Mute and Solo, etc. The exact parameter configuration depends on which external MIDI control device you are using.

A white stripe in the Project window and in the MixConsole indicates which channels are currently linked to the remote control device.
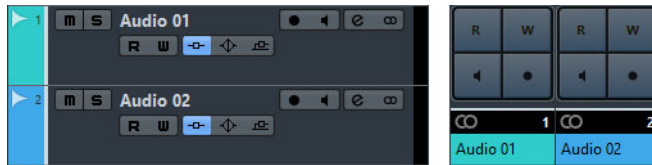
I<small>MPORTANT</small>

Sometimes communication between Cubase and a remote device is interrupted or the handshaking protocol fails to create a connection. To re-establish communication with any device in the Devices list, select it and click the Reset button in the lower part of the Device Setup dialog. The "Send Reset Message to all Devices" button at the top left of the dialog next to the "+" and "-" buttons will reset every device in the Devices list.

Operations

Global options for remote controllers

In the Device Setup dialog, on the page for your remote device, some (or all) of the following global functions may be available (depending on your remote device):

Bank pop-up menu

> If your remote device contains several banks, you can select the bank you want to use.
>
> The bank you select here is used by default when Cubase is launched.

Smart Switch Delay

> Some of the Cubase functions (e.g. Solo and Mute) support the so called smart switch behavior: In addition to regular activation/deactivation of a function by clicking a button, you can also activate the function for as long as the button is pressed. Upon releasing the mouse button, the function is deactivated.
>
> This pop-up menu allows you to specify how long a button must be pressed before it goes into smart switch mode. When "Off" is selected, the smart switch function is deactivated in Cubase.

Enable Auto Select

If this option is activated, touching a fader on a touch-sensitive remote control device automatically selects the corresponding channel. On devices without touch-sensitive faders, the channel gets selected as soon as you move the fader.

Writing automation using remote controls

Automating the MixConsole using a remote control device is done in the same way as when you operate on-screen controls in Write mode. In order to replace existing automation data for a control, the computer needs to know how long the user actually "grabbed" or used the control. When doing this "on screen", the program simply detects when the mouse button is pressed and released. When you are using an external remote control device without touch-sensitive controls, Cubase cannot tell whether you "grab and hold" a fader or simply move it and release it.

Therefore, when you are using a device without touch-sensitive controls and want to replace existing automation data, pay attention to the following:

▪ If you activate Write mode and move a control on the remote control device, all data for the corresponding parameter is replaced from the position where you moved the control, up to the position where playback is stopped.

In other words, as soon as you move a control in Write mode, it remains "active" until you stop playback.

▪ Make sure that you move only the controller you want to replace.

Assigning remote key commands

For some remote devices, you can assign any Cubase function (to which a key command can be assigned) to generic buttons, wheels, or other controls.

PROCEDURE

1. Open the Device Setup dialog and select your remote device.
   On the right side of the window you will find a three column table. This is where you assign commands.

2. Use the Button column to locate a remote device control or button to which you wish to assign a Cubase function.

3. Click in the Category column for the control and select one of the Cubase function categories from the pop-up menu.

4. Click in the Command column and select the desired Cubase function from the pop-up menu.
   The available items on the pop-up menu depend on the selected category.

5. Click "Apply" when you are done.
   Click "Reset" to revert to the default settings.

RESULT

The selected function is now assigned to the button or control on the remote device.

A note about remote controlling MIDI tracks

While most remote control devices will be able to control both MIDI and audio channels in Cubase, the parameter setup may be different. For example, audio-specific controls (such as EQ) will be disregarded when controlling MIDI channels.

The Generic Remote device

If you have a generic MIDI controller, you can use this for remote control of Cubase by setting up the Generic Remote device:

PROCEDURE

1. Open the Device Setup dialog on the Devices menu.

    If the Generic Remote device is not on the Devices list, you need to add it.

2. Click the "+" sign in the top left corner and select the "Generic Remote" device from the pop-up menu.

    When the Generic Remote device is added in the Device Setup dialog, you can open the corresponding window by selecting "Generic Remote" from the Devices menu.
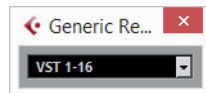
3. Select the Generic Remote device in the Devices list to the left.

    The settings for the Generic Remote device are displayed, allowing you to specify which control on your device should control which parameter in Cubase.
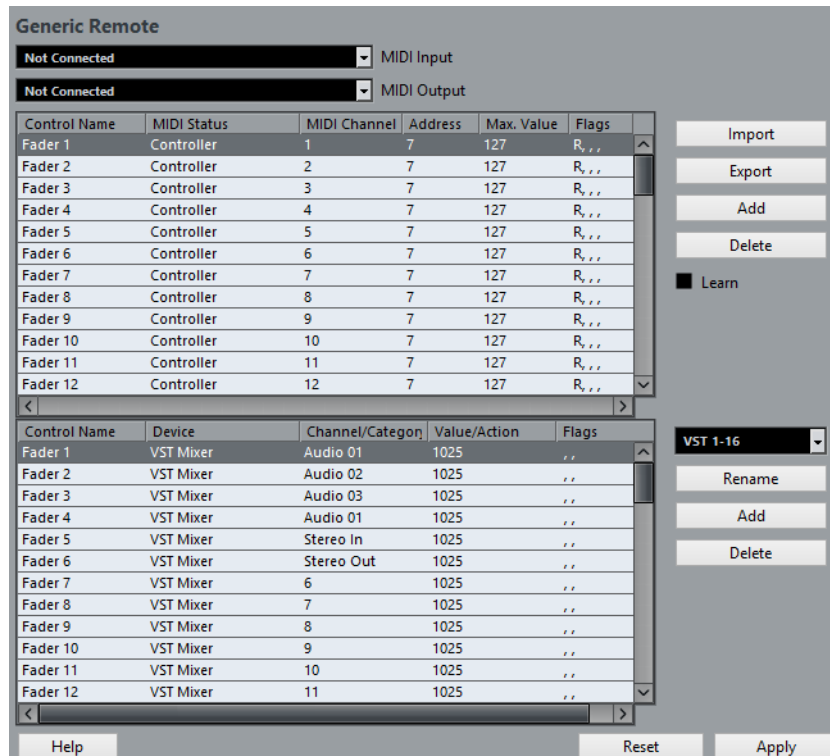
4. Use the MIDI Input and Output pop-up menus to select the MIDI port(s) to which your remote device is connected.

5. Use the pop-up menu to the right to select a bank.

   Banks are combinations of a certain number of channels, and are used because most MIDI devices can control only a limited number of channels at a time (often 8 or 16). For example, if your MIDI control device has 16 volume faders, and you are using 32 MixConsole channels in Cubase, you would need two banks of 16 channels each. When the first bank is selected you can control channel 1 to 16; when the second Bank is selected you can control channel 17 to 32.

6. Set up the table at the top according to the controls on your MIDI control device.

   The columns have the following functionality:

Column	Description
Control Name	Double-clicking this field allows you to enter a descriptive name for the control (typically a name written on the console). This name is automatically reflected in the Control Name column in the lower table.
MIDI Status	Clicking in this column opens a pop-up menu, allowing you to specify the type of MIDI message sent by the control (e.g. Controller, Prog. Change Trigger). The NRPN and RPN controllers are part of the MIDI specification and present a way to extend the available control messages. The "Ctrl JLCooper" option is a special version of a Continuous Controller where the 3rd byte of a MIDI message is used as address instead of the 2nd byte (a method supported by various JL-Cooper remote devices). For a description of the Ctrl-Houston status value, see the Steinberg Houston hardware manual.
MIDI Channel	Clicking in this column opens a pop-up menu, allowing you to select the MIDI channel on which the controller is transmitted.

Column	Description
Address	The Continuous Controller number, the pitch of a note, or the address of a NRPN/RPN Continuous Controller.
Max. Value	The maximum value the control will transmit. This value is used by the program to "scale" the value range of the MIDI controller to the value range of the program parameter.
Flags	Clicking in this column opens a pop-up menu, allowing you to activate or deactivate three 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.

- If you find that the table at the top holds too many or too few controls, you can add or remove controls with the Add and Delete buttons to the right of the table.

- If you are uncertain of which MIDI message a certain controller sends, you can use the Learn function.

  Select the control in the upper table (by clicking in the Control Name column), move the corresponding control on your MIDI device and click the Learn button to the right of the table. The MIDI Status, MIDI Channel, and Address values are automatically set to those of the moved control.

- If you use the Learn function for a control that sends a Program Change value, the "Prog. Change Trigger" option is automatically selected on the "MIDI Status" pop-up menu. This allows you to use the different values of a Program Change parameter to control different parameters in Cubase.

  If this does not give you the result you want, try using the "Prog. Change" value instead.

7. Use the table at the bottom to specify which Cubase parameters you want to control.

   Each row in the table is associated to the controller in the corresponding row in the first table (as indicated by the Control Name column). The other columns have the following functionality:

Column	Description
Device	Clicking in this column opens a pop-up menu, used for determining which device in Cubase is controlled. The special "Command" option allows you to perform certain command actions by remote control. One example of this is the selection of remote banks.
Channel/ Category	This is where you select the channel to be controlled or, if the "Command" Device option is selected, the Command category.
Value/ Action	Clicking in this column opens a pop-up menu, allowing you to select the parameter of the channel to be controlled (typically, if the "VST Mixer" Device option is selected, you can choose between volume, pan, send levels, EQ, etc.). If the "Command" Device option is selected, this is where you specify the "Action" of the category.

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Column	Description
Flags	Clicking in this column opens a pop-up menu, allowing you to activate or deactivate three flags:

- Push Button – When activated, the parameter is only changed if the received MIDI message shows a value unequal to 0.

- Toggle – When activated, the parameter value is switched between minimum and maximum value each time a MIDI message is received. The combination of Push Button and Toggle is useful for remote controls which do not latch the state of a button. One example is controlling mute status with a device on which pressing the Mute button turns it on, and releasing the Mute button turns it off. If Push Button and Toggle are activated, the Mute status will change between on and off whenever the button is pressed on the console.

- Not Automated – When activated, the parameter will not be automated.

8. If necessary, make settings for another bank.

NOTE

Note that you only need to make settings in the bottom table for this bank. The table at the top is already set up according to the MIDI remote device.

If necessary, you can add banks by clicking the Add button below the Bank pop-up menu.

Clicking the Rename button allows you to assign a new name to the currently selected bank, and you can remove an unneeded bank by selecting it and clicking the Delete button.

9. When you are finished, close the Device Setup window.

Now, you can control the specified Cubase parameters from the MIDI remote device. To select another bank, use the pop-up menu in the Generic Remote window (or use a control on the MIDI remote device, if you have assigned one for this).

Importing and exporting remote setups

The Export button in the top right corner of the Generic Remote Setup window allows you to export the current setup, including the Control configuration (the table at the top) and all banks. The setup is saved as a file (with the file extension ".xml"). Clicking the Import button allows you to import saved remote setup files.

NOTE

The last imported or exported remote setup will automatically be loaded when the program starts or the Generic Remote control is added in the Device Setup dialog.

The Remote Control Editor (Cubase Elements only)

Often, the automatic mapping of plug-in parameters to remote control devices appears rather random, and not very intuitive. The Remote Control Editor allows you to define your own mapping of VST plug-in parameters to the controls of the supported hardware controllers.

- To open the Remote Control Editor, right-click the plug-in panel of the plug-in that you want to remote-control and select "Remote Control Editor".

Layout Section

The main area of the editor is the Layout section. Layouts represent the hardware devices that are used to remote-control the plug-in parameters. Like these devices, a layout can have a number of pages. These pages contain a number of cells, which in turn contain controls. The available controls are a text label, a knob, and two switches.

You can perform the following editing operations:

- Change the parameter assignments

- Change the name in the text label

- Set up the cells

- Arrange the order of cells and pages

When you open the editor for the first time, the Standard Layout is shown.

Inspector Section

The Inspector contains the settings and the parameter assignment for the selected cell. The upper section contains settings for the text label. The lower section contains settings for the knob and the switches.
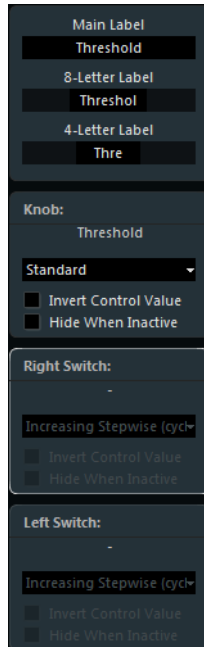
Status Bar

When you position the mouse pointer over an element in the editor window, the status bar shows information on what you can do with this element.

Setting up the Standard Layout
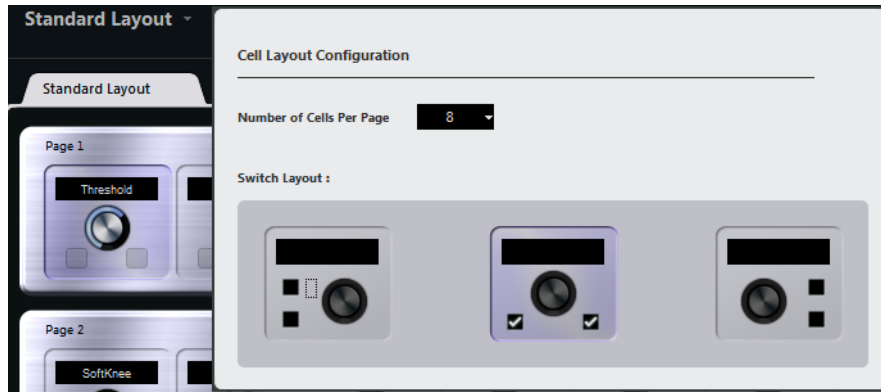
Click the "Set up Cell Layout" button to open the Cell Layout Configuration panel. Here, you can make the following settings:

- Use the pop-up menu to specify the number of cells per page.

- In the lower section, select the switch layout that you want to use for the pages.

  You can specify the number of switches for a cell by activating/deactivating them.

Defining the Controls

You can define the operation for a particular switch or knob. This includes changing the LED ring or changing its behaviour, from continuous value representation to on/off, for example.

Right-click the control and select a new control style in the settings window or select the control and select a style in the inspector.

NOTE

- To be able to make settings for a control, it has to be assigned to a function.

- Not all hardware devices support all control type settings.

Control Type Settings for Knobs
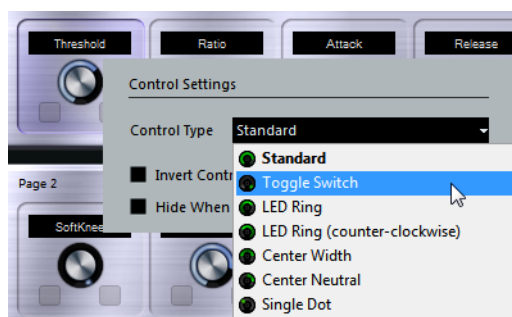
The following control types are available for knobs:

Standard

A standard knob with undefined LED style.

Toggle Switch

This is best used for parameters with two states, like On/Off buttons.

LED Ring

An LED ring is shown around the knob. The setting increases clockwise.

LED Ring (counter-clockwise)

An LED ring is shown around the knob. The setting increases counter-clockwise from right to left.

Center Width

The LED ring starts at the top center position and when the settings increase, an LED is shown growing in both directions.

Center Neutral

The dial starts at the top center position and can be moved left or right, like a pan control, for example.

Single Dot

As "LED Ring", but showing only a dot to indicate the current value.

Control Type Settings for Switches
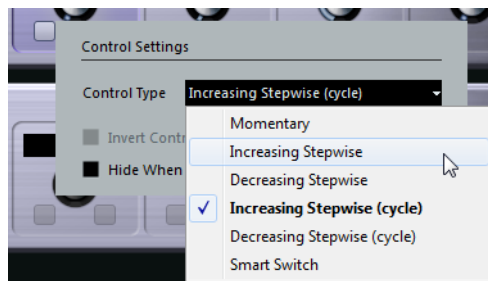
The following options are available for switches:

Momentary

The assigned function is active for as long as you keep the switch pressed.

Increasing Stepwise

Pressing the switch steps through the available settings until the maximum is reached.

Decreasing Stepwise

Pressing the switch steps through the available settings in reverse order until the minimum is reached.

Increasing Stepwise (cycle)

Pressing the switch steps through the available settings, starting over with the minimum value when the maximum is reached.

Decreasing Stepwise (cycle)

Pressing the switch steps through the available settings in reverse order, starting over with the maximum value when the minimum is reached.

Smart Switch

This changes between two states every time you press the switch, like an On/Off button. Furthermore, if you keep the switch pressed, you enter Momentary mode, that is, the corresponding function stays active for as long as the button is pressed.

Invert Control Value

This inverts the control state/value.

Hide Control When Inactive

Hides plug-in parameters when they are inactive or disabled.

Assigning Parameters to Controls

PROCEDURE

1. Click the L button ▮ on the toolbar to activate Learn mode for the editor.
2. In the editor, select the control that you want to assign to a plug-in parameter.
    A colored frame around a control shows that this control has the Learn focus.
3. Click on a parameter on the plug-in panel.
    This assigns that parameter to the control.
    You can also double-click on a control in the editor to open the list of available plug-in parameters, and click a parameter to assign it to the control.
4. Click on another control to set the Learn focus to that control and assign a parameter to it.
5. Press [Esc] to end Learn mode.

Removing the Parameter assignment

- To remove the parameter assignment for a cell, activate Learn mode, select the cell, and press [Delete] or [Backspace].

- To remove all assignments, click the "Remove All Assignments" button.
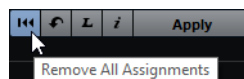
Assignment Status

You can show the current assignment of all cells in a layout by activating the "i" button in the top right corner of the editor. This is useful to get a quick overview of the parameters that are assigned to the available controls.

Editing the Layout

In the Layout section, you can perform a number of editing operations and arrange the pages to your liking.

Making Name Settings for the Cells

The top three text fields in the Inspector can be used to specify the names for a cell.

This is useful if you are working with hardware devices that have value fields that only display a limited number of characters, for example. The first text field shows the long name, as it is shown in the cell. In the second field, you can enter a name that can contain up to 8 characters, and up to 4 characters in the third.

Rearranging the order of a page or a cell

- To copy the settings of one cell to another, select a cell, press [Alt]/[Option] and drag it to another cell.

- To move a cell, drag it to an empty cell.

- To swap the contents of two cells, press [Ctrl]/[Command] and drag one cell to the other.

NOTE

Drag and drop also works between different pages.

Navigating

- You can use the cursor keys to navigate in all directions.

- When Learn mode is active, pressing [Shift] allows you to step between the controls within the cells.

- To step forwards or backwards through the different layouts, use [Tab] and [Shift]-[Tab].

Adding/Removing Pages

- To add a page to a layout, click the "+" button on the right of a page.

- To remove a page, click the corresponding "-" button.

NOTE

A layout always contains at least one page.

Adding/Removing a New Hardware Layout

- To add a hardware layout for a particular hardware type, click the "+" button to the right of the tabs.

- To remove a hardware layout, click the "x" icon of a tab.

Changing the Settings in a Layout

- To modify an existing layout, save the new settings by clicking the Apply button in the top right corner of the editor.
  If the hardware supports this function, the changes are immediately reflected on the hardware controllers.

Resetting the Layout and Copying Layout Settings between Pages

Click the arrow button in the top right corner of the editor to revert to the default settings for the current layout or to copy the settings of one layout page to another.

Apple Remote (Macintosh only)

Many Apple computers come with an Apple Remote Control, a small hand-held device akin to TV remote controls. It allows you to remotely control certain features in Cubase.

PROCEDURE

1. Open the Device Setup dialog and select Apple Remote Control from the Add Device pop-up menu.

2. In the list on the right, the Apple Remote's buttons are listed. For each button you can open a pop-up menu from which you can select a Cubase parameter.

   The parameter you select is assigned to the corresponding button on the Apple Remote.
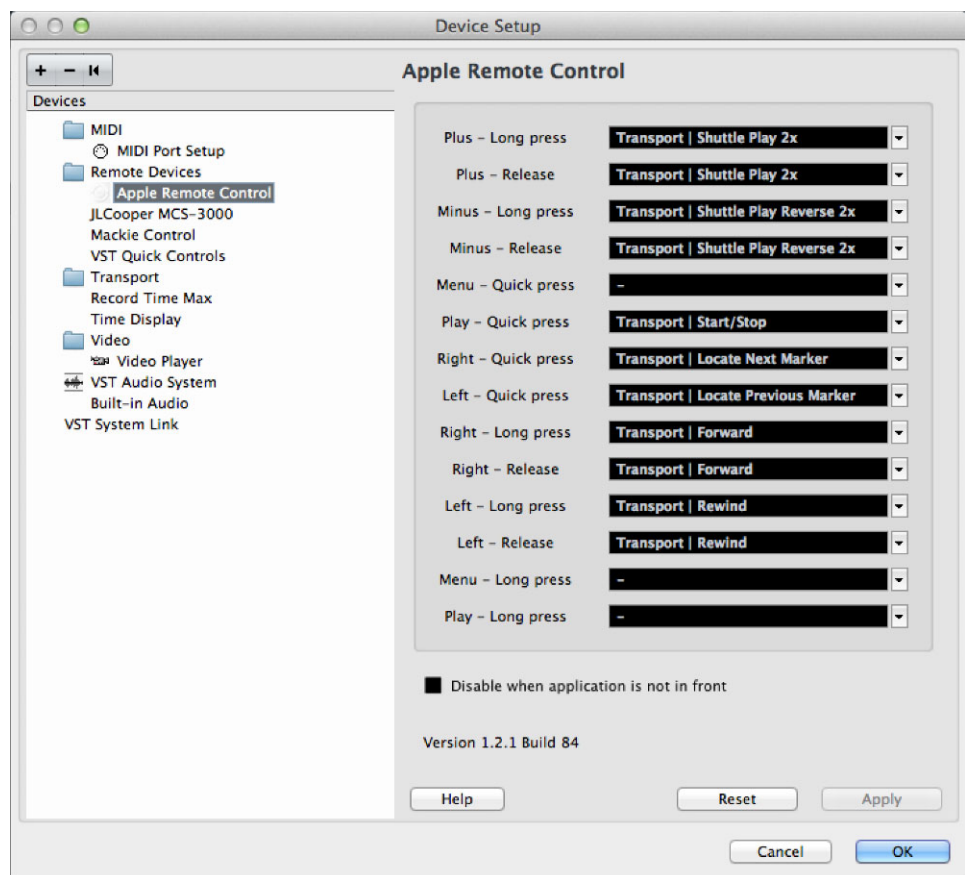
By default, the Apple Remote always controls the application that currently has the focus on your Macintosh computer (provided that this application supports the Apple Remote).

NOTE

When the "Disable when application is not in front" option is not selected, the Apple Remote will control Cubase even if it does not have the focus.

MIDI realtime parameters

For each MIDI track, you can set up a number of track parameters, or modifiers. These affect how the MIDI data is played back, "transforming" MIDI events in realtime before they are sent to the MIDI outputs.

On the following pages, the available parameters and effects are described. Keep in mind:

- The actual MIDI events will not be affected – the changes happen "on the fly".

- Since the modifier settings do not change the actual MIDI data on the track, they will not be reflected in the MIDI editors. To convert the track settings into "real" MIDI events, use the Freeze MIDI Modifiers function or the Merge MIDI in Loop function.

RELATED LINKS
Making your settings permanent on page 423

The Inspector – general handling

The MIDI modifiers and effects are set up in the Inspector.

- To show the Inspector, click the "Set up Window Layout" button on the toolbar and activate the Inspector option.
  The Inspector is displayed to the left of the track list.
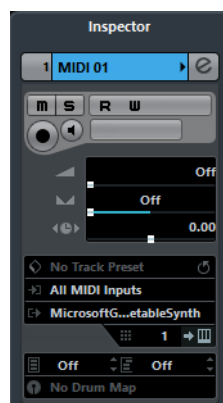
- For MIDI tracks, several sections are available in the Inspector. Which of these are displayed is determined in the setup context menu or the Setup dialog of the Inspector.

- ▪ You can fold or unfold the sections individually by clicking on the section name.

  Clicking the name for a hidden section brings it to view and hides the other sections. [Ctrl]/[Command]-clicking the tab allows you to hide or show a section without affecting other sections. [Alt]/[Option]-clicking a tab shows or hides all sections in the Inspector.

NOTE

Folding or hiding (via the Setup dialog) a section does not affect the functionality but merely hides the section from view. This means your settings will still be active even if you fold or hide the Inspector settings.

RELATED LINKS

The Inspector sections

Basic track settings

The topmost Inspector section contains the basic track settings. These settings either affect the basic functionality for the track (mute, solo, enable record, etc.) or send out additional MIDI data to the connected devices (program change, volume, etc.). The section contains all settings that are available in the track list, with a few additional parameters:

Load/Save Track Preset button

Allows you to load or save a track preset.

Track name field

Click once to show/hide the topmost Inspector section. Double-click to rename the track.

Edit button

This opens the Channel Settings window for the track (a window showing a channel with volume fader and other controls, along with effect settings).

Mute/Solo buttons

Mutes or solos the MIDI track.

Read/Write buttons

Used for automating the track settings.

Record enable button

Activate this to make the track ready for recording.

Monitor button

When this is activated (and the "MIDI Thru Active" option is activated in the Preferences dialog, MIDI page), incoming MIDI will be routed to the selected MIDI output.

Volume

Use this to adjust the level for the track. Changing this setting will move the track's fader in the MixConsole and vice versa.

MIDI Pan

Use this to adjust the panning of the track.

Delay

This adjusts the playback timing of the MIDI track. Positive values delay the playback while negative values cause the track to play earlier. The values are set in milliseconds.

In/Out/Chn pop-up menus

This is where you select MIDI input, MIDI output, and MIDI channel for the track.

Edit Instrument button

If the MIDI track is routed to a VST instrument, clicking this button opens the control panel for the VST instrument.

Bank and Program Selector pop-up menu

Allows you to select a sound, see below. (If no bank is available, only the Program selector is shown.)

Map pop-up menu

Allows you to select a drum map for the track.

NOTE

- Note that the functionality of the Bank and Program selector settings (used for selecting sounds in the connected MIDI instrument) depends on the instrument to which the MIDI output is routed, and how you have set it up in the MIDI Device Manager. The MIDI Device Manager allows you to specify which MIDI instruments and other devices are connected to the various MIDI outputs, thus making it possible to select patches by name.

- Many of the basic track settings are duplicated in the MIDI Fader section of the Inspector.

RELATED LINKS

MIDI Modifiers

The settings on this tab affect the MIDI events on the track in realtime during playback. They will also be in effect if you play "live" with the track selected and record enabled (provided that "MIDI Thru Active" is activated in the Preferences dialog, MIDI page). This makes it possible, for example, to transpose or adjust the velocity of your live playing.

NOTE

If you want to compare the result of your modifier settings with the "unprocessed" MIDI, you can use the Bypass button in the MIDI Modifiers section. When this is activated, the MIDI Modifiers settings will be temporarily disabled. A bypassed section is indicated by a yellow Bypass button.

Transpose

This allows you to transpose all notes on the track in semitones. The available range is -127 to +127 semitones, but remember that the total range of MIDI note numbers is 0 to 127. Furthermore, not all instruments can play back notes over the whole range. Therefore, extreme transpositions can give rather strange and unwanted results.

▪   You can also transpose individual MIDI parts using the Transpose field in the info line.
    The transposition in the info line (for the individual part) is added to the transpose value you have set up for the whole track in the Inspector.

Velocity Shift

This setting lets you change the dynamics of all notes on the track. The value in this field is added to the velocity of each note message that is sent out (use negative values to lower the velocities). The range is -127 to +127 with 0 representing no change in velocity.

Note that the effect of changing the velocity depends on the sound and instrument.

You can also adjust the velocity of events in individual MIDI parts using the Velocity field in the info line. The velocity shift in the info line (for the individual part) is added to the velocity shift you have set up for the whole track in the Inspector.

Velocity Compression

This function multiplies the velocity values with the factor you specify. This factor is set using a numerator (left value) and a denominator (right value), resulting in a fractional number (1/2, 3/4, 3/2 etc.). For example, if you set the factor to 3/4, the velocities will be three quarters of their original values. This will also affect the difference in velocity between the notes, thus compressing or expanding the velocity scale. Typically, you would combine this setting with the Velocity Shift parameter.

An example:

Let's say you have three notes with the velocity values 60, 90 and 120, and wish to "even out" the velocity differences somewhat. If you set the Velocity Compression value to 1/2, the notes will play back with the velocities 30, 45 and 60. By adding 60 in the Velocity Shift field, the notes will play back with the velocities 90, 105 and 120, meaning you have compressed the velocity range.

In a similar way, you can use Velocity Compression values greater than 1/1 together with negative values in the Velocity Shift field, to expand the velocity range.

IMPORTANT

Remember that the maximum velocity is always 127 no matter how much you try to expand.

Length Compression

This value adjusts the lengths of all notes on the track. As with Velocity Compression, the value is set with a numerator and denominator. For example, the value 2/1 means that all note lengths will be doubled, while 1/4 means all note lengths will be a quarter of the actual lengths.

Random

The Random settings let you introduce random variations to various properties of MIDI notes. Anything from very subtle variations to dramatic changes can be applied.

Range

The Range function lets you specify a note (pitch) or velocity range and either force all notes to fit within this range, or exclude all notes outside this range from playback. As with the Random function, there are two separate Range settings.

HMT: Follow (Cubase Elements only)

Activating this button for a track applies Hermode Tuning to the notes played on this track. Hermode Tuning retunes the notes you play and creates clear frequencies for every fifth and third interval, for example. Retuning only affects individual notes and maintains the pitch relationship between keys and notes. The retuning is a continuous process and takes the musical context into account.

When you apply Hermode Tuning to tracks that use VST 2 instruments, the played notes are retuned with every keystroke. Dynamic retuning while notes are playing is only possible with VST 3 instruments that support Micro Tuning and Note Expression. For VST instruments that support Note Expression, Hermode Tuning also works in MIDI Thru mode.

To activate Hermode tunig, activate the "HMT: Follow" button, and select one of the following tuning types in the "HMT Type" pop-up menu of the Project Setup dialog:

Mode	Description
None	No tuning is applied.
Reference (pure 3/5)	Tunes pure thirds and fifths.
Classic (pure 3/5 equalized)	Tunes pure thirds and fifths. In conflict situations, a slight equalization is applied. This tuning type is suitable for all kinds of music.
Pop Jazz (3/5/7)	Tunes pure thirds and fifths, and natural sevenths. This tuning type should not be applied to polyphonic music. Try this with pop or jazz.
Baroque (3/5 adaptive)	Tunes pure thirds and fifths. The degree of purity changes according to the sequence of harmonies. This tuning type is suitable for church organ and polyphonic music.

NOTE

It may take a moment until all notes are recalculated and you hear the results of the retuning. Notes that are produced by MIDI plug-ins are not taken into account.

HMT: Use for Analysis (Cubase Elements only)

If you activate this option, the notes played on the track are used to calculate retuning. Keep this activated when working with Hermode Tuning. On tracks with acoustic piano, we recommend to activate this option, and to deactivate "HMT: Follow". This excludes the piano from being tuned which would sound unnatural.

Editing Transpose and Velocity for MIDI Parts

When one or several MIDI parts are selected, the info line contains transpose and velocity fields.

- ▪ Adjusting the Transpose field transposes the selected parts in semitone steps.

- ▪ Adjusting the Velocity field shifts the velocity for the selected parts. The value that you specify is added to the velocities of the notes in the parts.

NOTE

This transposition does not change the actual notes in the part. It only affects the notes on playback. The transposition that you specify for a part on the info line is added to the transposition set for the whole track.

Setting up random variations

There are two separate "random generators", set up in the following way:

PROCEDURE

1. Open the Random pop-up menu and select which note property is randomized.

   The options are position, pitch, velocity and length.

   NOTE

   Keep in mind that depending on the content of the track, certain parameter changes might not be immediately noticeable or have any effect at all (as would be the case if applying random length to a percussion track playing "one-shot" samples for example). To best audition the random changes, choose a track with clearly defined rhythm and note content (as opposed to a string pad).

2. Set the desired range of random deviation by entering values in the two number fields.

   The two values govern the limits of the randomization, so that the values will vary between the left value and the right value (you cannot set the left value higher than the right value). The maximum random range for each property is listed in the table below:

Property	Range
Position	-500 to +500 ticks
Pitch	-120 to +120 semitones
Velocity	-120 to +120
Length	-500 to +500 ticks

   NOTE

   You can make independent settings for the two random generators.

   To deactivate the Random function, open the Random pop-up menu(s) and select "OFF".

Setting up ranges

PROCEDURE

1. Open the Range pop-up menu and select one of the following four modes:

Mode	Description
Vel. Limit	This function affects all velocity values outside the specified range. Velocity values below the Min setting (the lower limit of the range) are set to the Min value, and velocity values above the Max setting are set to the Max value. Notes with velocity values within the set range are not affected. Use this if you want to force all velocity values to fit within a certain range.
Vel. Filter	Velocity Filter works by excluding all notes with velocity values outside the specified range. Notes with velocity values below the Min setting or above the Max setting will not be played back. Use this to "isolate" notes with certain velocity values.
Note Limit	This function allows you to specify a pitch range, and forces all notes to fit within this range. Notes outside the specified range are transposed up or down in octave steps until they fit within the range.Note: If the range is too "narrow", so that some notes cannot be fit within the range by octave-transposing, these notes will get a pitch in the middle of the range. For example, if you have a note with a pitch of F3, and the range is C4-E4, that note will be transposed to D4.
Note Filter	Note Filter works by excluding all notes with pitches outside the specified range. Notes lower than the Min setting or higher than the Max setting will not be played back. Use this to "isolate" notes with certain pitches.

2. Use the two fields to the right to set the minimum and maximum values.

    These values will be shown as numbers (0 to 127) for the velocity modes and as note numbers (C-2 to G8) for the pitch modes.

    NOTE

    Note that you can make independent settings for the two Range functions.

    To deactivate the Range function, open the Range pop-up menu(s) and select "OFF".

MIDI Fader section

This contains a single channel, allowing you to set volume, pan, mute/solo and other parameters for the track, and a panel view of the active sends/inserts. This is a "mirror" of the track's channel in the MixConsole.

Notepad section

This is a standard notepad, allowing you to enter notes and comments about the track. Each track has its own notepad in the Inspector.

VST Instrument section (Cubase Elements only)

If the MIDI track is routed to a VST instrument, a new section will appear at the bottom of the Inspector, labeled with the name of the VST instrument. Clicking this section shows a duplicate of the Inspector settings for the VST instrument channel. This makes it easy to adjust the channel settings for the VST instrument while you are editing the MIDI track.

▪ If multiple outputs for a VST instrument are activated, there is a setting called "Output" at the top of the VST Instrument section.

New sections will also be added in the following cases:

▪ When a MIDI track is routed to an effect plug-in that also receives audio data, i.e. that is used as an insert effect for an audio track (e.g. MIDI Gate), a section for this audio track appears in the MIDI track inspector.

▪ If a MIDI track is routed to a plug-in assigned to an FX channel track, an FX section is added to the Inspector.

NOTE

For an easy way to combine MIDI and VST instruments, check out instrument tracks.

RELATED LINKS

Using MIDI devices

The MIDI Device Manager allows you to specify and set up your MIDI devices, making global control and patch selection easy.

MIDI devices – general settings and patch handling

On the following pages, we will describe how to install and set up preset MIDI devices, and how to select patches by name from within Cubase.

About Program Change and Bank Select

To instruct a MIDI instrument to select a certain patch (sound), you send a MIDI Program Change message to the instrument. Program Change messages can be recorded or entered in a MIDI part like other events, but you can also enter a value in the Program Selector field in the Inspector for a MIDI track. This way, you can quickly set each MIDI track to play a different sound.

With Program Change messages, you are able to select between 128 different patches in your MIDI device. However, many MIDI instruments contain a larger number of patch locations. To make these available from within Cubase, you need to use Bank Select messages, a system in which the programs in a MIDI instrument are divided into banks, each bank containing 128 programs. If your instruments support MIDI Bank Select, you can use the Bank Selector field in the Inspector to select a bank, and then the Program Selector field to select a program in this bank.
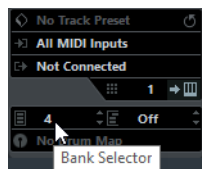
Unfortunately, different instrument manufacturers use different schemes for how Bank Select messages are constructed, which can lead to some confusion and make it hard to select the correct sound. Also, selecting patches by numbers this way seems unnecessarily cumbersome, when most instruments use names for their patches nowadays.

To help with this, you can use the MIDI Device Manager to specify which MIDI instruments you have connected by selecting from a vast list of existing devices or by specifying the details yourself. Once you have specified which MIDI devices you are using, you can select to which particular device each MIDI track is routed. It is then possible to select patches by name in the track list or Inspector.

Opening the MIDI Device Manager

Select MIDI Device Manager from the Devices menu to bring up the following window:
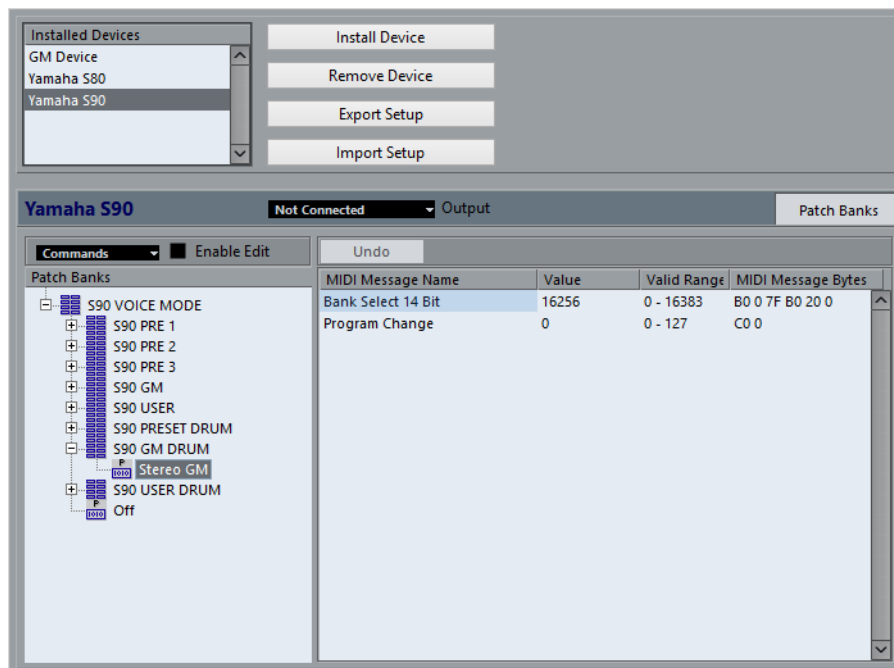
Installed Devices

List of connected MIDI devices. The first time you open the MIDI Device Manager, this list will be empty.

Install Device/Remove Device

Use these buttons to install/remove devices.

Export Setup/Import Setup

Use these buttons to import/export XML Device setups.

Open Device

This button opens the selected device.

Output

Here you specify to which MIDI output the selected device is connected.

Commands

This pop-up menu lets you edit the selected device (provided that "Enable Edit" is ticked). The patch structure for the selected device is shown on the left side of the dialog.

MIDI Messages

This area on the right side of the dialog shows exactly which MIDI messages are sent out to select the patch highlighted in the list to the left.

When you open the MIDI Device Manager for the first time, it will be empty (because you have not installed any devices yet). On the following pages we describe how to add a pre-configured MIDI device to the list, how to edit the settings and how to define a device from scratch.

Note that there is an important difference between installing a preset MIDI device ("Install Device") and importing a MIDI device setup ("Import Setup"):

- The presets do not include any device mapping of parameters and controls and no graphic panels.

    They are simply patch name scripts. When you install a preset MIDI device, it is added to the Installed Devices list. For more information about patch name scripts, see the separate PDF document "MIDI Devices".

- A device setup can include device mapping and/or patch information.

    Device setups are also added to the list of installed devices when imported.

Defining a new MIDI device

If your MIDI device is not included in the list of pre-configured devices (and is not a "plain" GM or XG device), you need to define it manually to make it possible to select patches by name.

PROCEDURE

1. In the MIDI Device Manager, click the Install Device button.

    The Add MIDI Device dialog opens.

2. Select "Define New…" and click OK.

    A dialog appears.

3. Enter the name of the device and the MIDI channels you would like the device to use and click OK.

    The device appears in the Installed Devices list.

4. Select the device in the list.

    As you can see, it currently contains only an Empty Bank item.

5. Make sure that the Enable Edit checkbox is activated.

    Now you can use the functions on the Commands pop-up menu on the left to organize the patch structure of the new device.

Installing a preset MIDI device

1. Click the Install Device button.

   A dialog opens listing all pre-configured MIDI devices. For now we assume that your MIDI device is included in this list.

2. Locate and select the device in the list and click OK.

   If your MIDI device is not included in the list but is compatible with the GM (General MIDI) or XG standards, you can select the generic GM or XG Device options at the top of the list.

   When you select one of these options, a name dialog will appear. Enter a name for the instrument and click OK.

   The device now appears in the Installed Devices list to the left.

3. Make sure that the new device is selected in the list and open the Output pop-up menu.

4. Select the MIDI output that the device is connected to.

The Patch Banks list in the left half of the window shows the patch structure of the device. This could simply be a list of patches, but it is usually one or several layers of banks or groups containing the patches (much like a folder structure on a hard disk for example).
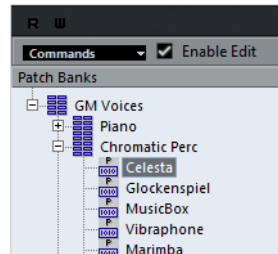
- You can rename a device in the Installed Devices list by double-clicking and typing – this is useful if you have several devices of the same model, and want to separate them by name instead of by number.

- To remove a device from the Installed Devices list, select it and click Remove Device.

About Patch Banks

Depending on the selected device, you may find that the Patch Banks list is divided in two or more main banks. Typically, these are called Patches, Performances, Drums, etc. The reason for having several patch banks is that different "types" of patches are handled differently in the instruments. For example, while "patches" typically are "regular" programs that you play one at the time, "performances" may be combinations of programs, which could be split across the keyboard, layered, or used for multi-timbral playback, and so on.

Devices with several banks have an additional tab "Bank Assignment". Select this tab to specify for each MIDI channel which bank it should use.

Yamaha S90

Channel 1	S90 VOICE MODE⌄
Channel 2	S90 VOICE MODE⌄
Channel 3	S90 VOICE MODE⌄
Channel 4	S90 VOICE MODE⌄
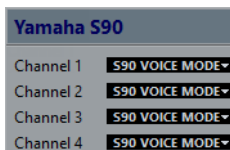
The selection here will affect which bank is displayed when you select programs by name for the device in the track list or Inspector. For example, many instruments use MIDI channel 10 as an exclusive drum channel, in which case you would want to select the "Drums" (or "Rhythm Set", "Percussion", etc.) bank for channel 10 in this list. This would then let you choose between different drum kits in the track list or Inspector.

Selecting a patch for an installed device

If you return to the Project window at this point, you will find that the installed device has been added to the MIDI Output menus (in the track list and the Inspector). Now you can select patches by name, in the following way:

PROCEDURE

1. Open the Output menu (in the track list or Inspector) for the track you want to associate the installed device with, and select the device.

    This directs the track to the MIDI output specified for the device in the MIDI Device Manager. The Bank and Program Selector fields in the track list and Inspector are replaced by a single Program Selector field that currently reads "Off".

2. Click the Program Selector field to display a pop-up menu, hierarchically listing all the patches in the device.

    The list is similar to the one displayed in the MIDI Device Manager. You can scroll the list up and down (if required), click the plus/minus signs to show or hide subgroups, etc.
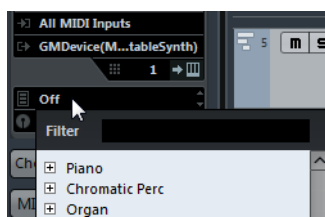
    You can also use a filter function here. For this, enter the search term in the Filter field, e.g. "drum", and press [Return] to display all sounds with "drum" in the name.

3. Click a patch in the list to select it.

    This sends the appropriate MIDI message to the device. You can also scroll the program selection up or down, as with any value.

Renaming patches in a device

The pre-configured devices list is based on the factory-preset patches, i.e. the patches included in the device when you first bought it. If you have replaced some of the factory presets with your own patches, you need to modify the device so that the patch name list matches the actual device:

PROCEDURE

1. In the MIDI Device Manager, select the device in the Installed Devices list.
   Make sure that the Patch Banks tab is selected.

2. Activate the Enable Edit checkbox.
   When this is turned off (default), you cannot edit the pre-configured devices.

3. In the Patch Banks list, locate and select the patch you want to rename.
   In many instruments, the user-editable patches are located in a separate group or bank.

4. Click on the selected patch in the Patch Banks list to edit its name.

5. Type in the new name and press [Return].

6. Rename the desired patches in this way, and finish by deactivating Enable Edit again (to avoid modifying the device by accident).

   NOTE

   You can also make more radical changes to the patch structure in a device (adding or deleting patches, groups or banks), see below. For example, this is useful if you expand your MIDI device by adding extra storage media such as RAM cards.

Patch Structure

Patches are structured as follows:

- Banks are the main categories of sounds – typically patches, performances and drums, as described above.

- Each bank can contain any number of groups, represented by folders in the list.

- The individual patches, performances or drum kits are represented by presets in the list.

The Commands pop-up menu contains the following items:

Create Bank

Creates a new bank at the highest hierarchical level of the Patch Banks list. You can rename this by clicking on it and typing a new name.

New Folder

Creates a new subfolder in the selected bank or folder. This could correspond to a group of patches in the MIDI device, or just be a way for you to categorize sounds, etc. When you select this item, a name dialog opens, allowing you to name the folder. You can also rename the folder afterwards by clicking it and typing in the list.

New Preset

This adds a new preset in the selected bank or folder.

You can rename the preset by clicking it and typing a new name.

When the preset is selected, the corresponding MIDI events (Program Change, Bank Select, etc.) are shown in the event display to the right. The default setting for a new preset is Program Change 0 – to change this, proceed as follows:

IMPORTANT

For details on which MIDI events are used for selecting patches in the MIDI device, consult its documentation.

- To change which Program Change value is sent out to select the patch, adjust the number in the Value column for the Program Change event.

- To add another MIDI event (e.g. Bank Select) click directly below the last event in the list and select a new event from the pop-up menu.
  After adding a new event, you need to set its value in the Value column, as with Program Change.

- To replace an event, click on it and select another event from the pop-up menu.
  For example, a MIDI device may require that a Bank Select message is sent first, followed by a Program Change message, in which case you would need to replace the default Program Change message with a Bank Select message and add a new Program Change after that.

- To remove an event, select it and press [Delete] or [Backspace].

IMPORTANT

Different devices use different schemes for Bank Select. When you insert a Bank Select event, you should check the device's documentation to find out whether to choose "CC: BankSelect MSB", "Bank Select 14 Bit", "Bank Select 14 Bit MSB-LSB Swapped" or some other option.

Add Multiple Presets

This opens a dialog, allowing you to set up a range of presets to be added to the selected bank or folder.

Adding Multiple Presets

PROCEDURE

1. Add the event types required for selecting a patch in the MIDI device.
    This is done just as when editing the settings for a single event: clicking in the event display brings up a pop-up menu from which you can select an event type.

2. Use the Range column to set up either a fixed value or a range of values for each event type in the list.
    This requires some explanation:
    If you specify a single value in the Range column (e.g. 3, 15 or 127), all added presets will have an event of this type set to the same value.
    If you instead specify a value range (a start value and an end value, separated by a dash, e.g. 0–63), the first added preset will have an event set to the start value, the next value will be incrementally raised by one and so on, up to and including the end value.

MIDI Message Name	MIDI Message Bytes	Valid Range	Range	
CC: Gen Purp 4	B0 13 0	0 - 127	0-127	∧
Program Change	C0 0	0 - 127	7	

    NOTE

    The number of added presets depends on the Range setting.

3. Specify a Default Name below the event display.
    The added events will get this name, followed by a number. You can rename presets manually in the Patch Banks list later.

4. Click OK.
    A number of new presets have now been added to the selected bank or folder, according to your settings.

Other editing functions

-   You can move presets between banks and folders by dragging them to the Patch Banks list.

-   You can remove a bank, folder or preset by selecting it in the Patch Banks list and pressing [Backspace].

-   If you specify more than one bank, a Bank Assignment tab is added next to the Patch Banks tab.

RELATED LINKS

MIDI Processing

This chapter describes the various MIDI processing functions available on the MIDI menu. They offer various ways to edit MIDI notes and other events, either in the Project window or from within a MIDI editor.

MIDI functions vs. MIDI modifiers

In some cases, the result of a MIDI function can also be obtained by using MIDI modifiers. For example, the operations "Transpose" and "Quantize" are available both as MIDI modifiers and as MIDI functions.

The main difference is that MIDI modifiers do not affect the actual MIDI events on the track in any way, while MIDI functions change the events "permanently" (although recent changes can be undone).

Use the following guidelines to decide which path to choose for operations that are available both as modifiers and as functions:

• If you want to adjust a few parts or events only, use MIDI functions. The MIDI modifiers affect the output of the whole track (although they can be made permanent in a specific area with the Merge MIDI in Loop function).

• If you want to experiment with different settings, use MIDI modifiers.

• MIDI modifiers settings are not reflected in the MIDI editors, since the actual MIDI events are not affected.

    This can be potentially confusing; if you have transposed notes using modifiers for example, the MIDI editors will still show the notes with their original pitch (but they will play back at their transposed pitch). Therefore, MIDI functions are a better solution if you want to see the effects of your editing in the MIDI editors.

RELATED LINKS
   MIDI realtime parameters on page 404

What is affected by the MIDI functions?

Which events are affected when you use a MIDI function depends on the function, the active window and the current selection:

- Some MIDI functions only apply to MIDI events of a certain type.

  For example, quantization only affects notes, while the Delete Controllers function only applies to MIDI controller events.

- In the Project window, the MIDI functions apply to all selected parts, affecting all events (of the relevant types) in them.

- In the MIDI editors, the MIDI functions apply to all selected events. If no events are selected, all events in the edited part(s) will be affected.

Transpose

The "Transpose Setup…" option on the MIDI menu opens a dialog with settings for transposing the selected notes.
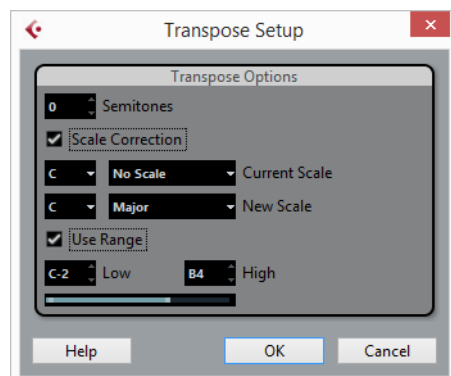
Semitones

This is where you set the amount of transposition.

Scale Correction

Scale Correction transposes the selected notes by forcing them to the closest note of the selected scale type. This can be used for creating interesting key and tonal changes, either by itself or in conjunction with the other settings in the Transpose Setup dialog.

- To activate Scale Correction, click the checkbox.

- Select a root note and scale type for the current scale from the upper pop-up menus.

- Select a root note and scale type for the new scale from the lower pop-up menus.
    Make sure to select the correct root note if you want to keep the result in the same key as the original notes, or select an entirely different key if you want to experiment.

Use Range

When this is activated, transposed notes will remain within the limit that you specify with the Low and High values.

If a note would end up outside this limit after transposition, it is shifted to another octave, keeping the correct transposed pitch if possible. If the range between the upper and lower limit is very narrow, the note will be transposed "as far as possible", i.e. to notes specified with the Low and High values. If you set Low and High to the same value, all notes will be transposed to this pitch!

OK and Cancel

Clicking OK performs the transposition. Clicking Cancel closes the dialog without transposing.

Making your settings permanent

The settings described in the chapter "MIDI realtime parameters" do not change the MIDI events themselves, but work like a "filter", affecting the music on playback. Therefore, you may want to make them permanent, i.e. convert them to "real" MIDI events, for example to transpose a track and then edit the transposed notes in a MIDI editor. For this, you can use two commands from the MIDI menu: "Freeze MIDI Modifiers" and "Merge MIDI in Loop".

RELATED LINKS
MIDI realtime parameters on page 404

Freeze MIDI Modifiers

"Freeze MIDI Modifiers" applies all filter settings permanently to the selected track. The settings are "added" to the events on the track, and all modifiers are set to zero. The "Freeze MIDI Modifiers" function affects the following settings for MIDI tracks:

- Several settings on the main tab of the Inspector (program and bank selection and the Delay parameter).

- The settings on the MIDI Modifiers tab (i.e. Transpose, Velocity Shift, Velocity Compression, and Length Compression).

The following settings for MIDI parts are taken into account as well:

- The Transpose and Velocity settings for parts displayed on the info line – the Volume setting is not taken into account.

Merge MIDI in Loop

The "Merge MIDI in Loop" function combines all unmuted MIDI events on all unmuted tracks, applies MIDI modifiers, and generates a new MIDI part, containing all the events as you would hear them during playback.

PROCEDURE

1. Mute all the tracks that you do not want to include in the merge.
    Instead of muting whole tracks, you can also mute individual parts.

2. Set up the left and right locators to encompass the area that you want to merge.
    Only events starting within this area will be included.

3. Select the track on which you want the new part to be created.
    If you do not select a track, a new MIDI track is created. If several MIDI tracks are selected, the new part is inserted on the first selected track. Existing data on the selected track can be kept or overwritten (see below).

4. On the MIDI menu, select "Merge MIDI in Loop…".
    The MIDI Merge Options dialog opens.

5. Activate the desired options and click OK.
    A new part is created between the locators on the destination track, containing the processed MIDI events.

    NOTE

    If you only want to include events from a single track in the merge operation, you may want to solo the track.

RELATED LINKS
MIDI Merge Options Dialog on page 424

MIDI Merge Options Dialog

The following options are available:

Include Inserts

If this is activated, any MIDI modifiers currently activated for the tracks will be applied.

Erase Destination

If this is activated, any existing MIDI data between the left and right locators on the destination track will be deleted.

Include Chase

If this is activated, events placed outside the selected part but relating to it will be included in the processing, e.g. a Program Change right before the left locator.

RELATED LINKS
Chase on page 142

Applying effects to a single part

Normally, the MIDI modifiers affect a whole MIDI track. This may not always be what you want. For example, you may want to apply some MIDI modifiers to a single part (without having to create a separate track for that part only). The "Merge MIDI in Loop" function can help:

PROCEDURE

1. Set up your MIDI modifiers the way you want them for the part.
   This will of course affect the whole track, but focus on the part for now.

2. Set the locators to encompass the part.
   An easy way to do this is to select the part and choose Locators to Selection from the Transport menu (or use the corresponding key command, by default [P]).

3. Make sure that the track holding the part is selected in the track list.

4. On the MIDI menu, select "Merge MIDI in Loop…".
   The MIDI Merge Options dialog opens.

5. Activate the desired options, making sure that "Erase Destination" is activated, and click OK.
   A new part is created on the same track, containing the processed events. The original part is deleted.

6. Turn off or reset all MIDI modifiers, so that the track plays back as before.

Dissolve Part

The Dissolve Part function on the MIDI menu allows you to separate MIDI events according to channels or pitches:

- When you work with MIDI parts (on MIDI channel "Any") containing events on different MIDI channels, activate the "Separate Channels" option.

- To separate MIDI events according to pitch, activate the "Separate Pitches" option.
  Typical examples are drum and percussion tracks, where different pitches usually correspond to separate drum sounds.

NOTE

When dissolving a part into either separate channels or separate pitches, you can automatically remove the silent (empty) areas of the resulting parts by activating the "Optimized Display" checkbox in the Dissolve Part dialog.

Dissolving parts into separate channels

Setting a track to MIDI channel "Any" will cause each MIDI event to play back on its original MIDI channel, rather than a channel set for the whole track. There are two main situations when "Any" channel tracks are useful:

- When you record several MIDI channels at the same time.

  You may for example have a MIDI keyboard with several keyboard zones, where each zone sends MIDI on a separate channel. Recording on an "Any" channel track allows you to play back the recording with different sounds for each zone (since the different MIDI notes play back on separate MIDI channels).

- When you have imported a MIDI file of Type 0.

  MIDI files of Type 0 contain only one track, with notes on up to 16 different MIDI channels. If you were to set this track to a specific MIDI channel, all notes in the MIDI file would be played back with the same sound; setting the track to "Any" will cause the imported file to play back as intended.

The Dissolve Part function scans MIDI parts for events on different MIDI channels and distributes the events into new parts on new tracks, one for each MIDI channel found. This allows you to work with each musical part individually.

PROCEDURE

1. Select the parts containing MIDI data on different channels.

2. Select "Dissolve Part" from the MIDI menu.

3. In the dialog that opens, select the "Separate Channels" option.

RESULT

Now, for each MIDI channel used in the selected parts, a new MIDI track is created and set to the corresponding MIDI channel. Each event is then copied into the part on the track with the corresponding MIDI channel. Finally, the original parts are muted.

An example:

This part contains events on MIDI channels 1, 2, and 3.

Selecting "Dissolve Part" creates new parts on new tracks, set to channels 1, 2, and 3. Each new part contains only the events on the respective MIDI channel. The original MIDI part is muted.

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Dissolving parts into separate pitches

The Dissolve Part function can also scan MIDI parts for events of different pitches, and distribute the events into new parts on new tracks, one for each pitch. This is useful when the different pitches are not used in a melodic context, but rather for separating different sounds (e.g. MIDI drum tracks or sampler sound FX tracks). By dissolving such parts, you can work with each sound individually, on a separate track.

PROCEDURE

1.   Select the parts containing MIDI data.

2.   Select "Dissolve Part" from the MIDI menu.

3.   In the dialog that opens, select the "Separate Pitches" option.

    A new MIDI track is created for each used pitch in the selected parts. The events are then copied into the parts on the track for the corresponding pitch. Finally, the original parts are muted.

Repeat Loop

With this function, the events inside the independent track loops will be repeated until the end of the part, i.e. the notes that were previously only played repeatedly are now actual notes on the MIDI track. Events to the right of the independent track loop (within the same part) will be replaced by this function.

RELATED LINKS

Other MIDI functions

The following items can be found on the Functions submenu of the MIDI menu:

Legato

Extends each selected note so that it reaches the next note.

You can specify a gap or overlap for this function with the "Legato Overlap" setting in the Preferences dialog (Editing–MIDI page).
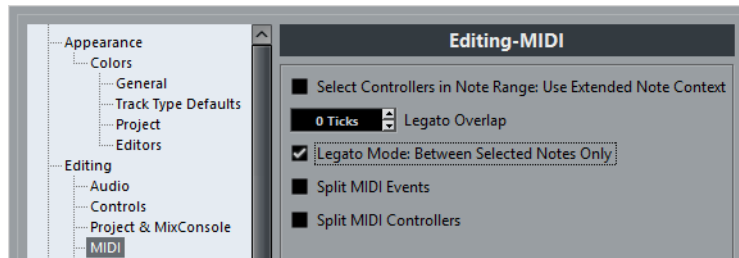
When using Legato with this setting, each note will be extended to end 5 ticks before the next note.

When you activate "Legato Mode: Between Selected Notes Only", the length of the note will be adjusted so that it reaches the next selected note, allowing you to apply Legato only to your bass line, for example.

NOTE

You can also apply a legato using the "Scale Length/Legato" slider in the MIDI editors.

RELATED LINKS

Fixed Lengths

This function resizes all selected notes to the length set with the Length Quantize pop-up menu on the MIDI editor toolbar.

Pedals to Note Length

This function scans for Sustain pedal on/off events, lengthens the affected notes to match the Sustain pedal off position, and then removes the Sustain Controller on/off events.

Delete Overlaps (mono)

This function allows you to make sure that no notes of the same pitch overlap (i.e. that one starts before the other ends). Overlapping notes of the same pitch can confuse some MIDI instruments (a new Note On is transmitted before the Note Off is transmitted). This command can then be used to automatically solve the problem.

Delete Overlaps (poly)

This function shortens notes when required, so that no note begins before another ends. This happens regardless of which pitch the notes have.

Velocity

This function opens a dialog that allows you to manipulate the velocity of notes in various ways.
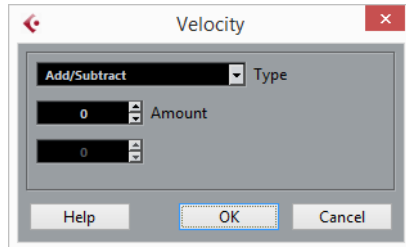
The following types of velocity processing are available:

Add/Subtract

This simply adds a fixed number to the existing velocity values. You set the value (positive or negative) with the Amount parameter.

Compress/Expand

Compresses or expands the "dynamic range" of MIDI notes by scaling the velocity values according to the Ratio setting (0 to 300%). The principle behind this is that multiplying different velocity values with a factor higher than 1 (over 100%) will also make the differences between velocity values greater, while using a factor lower than 1 (under 100%) will make the differences smaller. In short:

- To compress ("even out" velocity differences), use ratio values below 100%.

  After compression, you would probably want to add a velocity amount (with the Add/Subtract function) to maintain the average velocity level.

- To expand (create greater difference in velocity), use ratio values above 100%.

  Before you expand, you may want to adjust the velocity with the Add/Subtract function, so that the average velocity is somewhere in the middle of the range. If the average velocity is high (near 127) or low (near 0), expansion will not work properly, simply because velocity values can only be between 0 and 127!

Limit

This function allows you to make sure that no velocity values fall outside a given range (the Lower and Upper values). Any velocity values outside this range are raised/lowered to exactly the Lower/Upper values.

Fixed Velocity

This function sets the velocity of all selected notes to the Insert Velocity value on the toolbar in the MIDI editors.

Delete Doubles

This function removes double notes, i.e. notes of the same pitch on the exact same position from the selected MIDI parts. Double notes can occur when recording in Cycle mode, after Quantizing, etc.

Delete Notes

Allows you to delete very short or weak notes. This is useful for automatically removing unwanted "ghost notes" after recording. Selecting "Delete Notes…" opens a dialog in which you set up the criteria for the function.
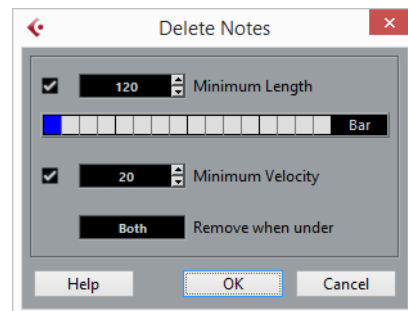
The parameters have the following functionality:

Minimum Length

When the Minimum Length checkbox is activated, the note length is taken into account, allowing you to remove short notes. You can either specify the minimum length (for notes to be kept) in the value field or by dragging the blue line in the graphical length display below.

▪ The graphical length display can correspond to 1/4 bar, one bar, two bars or four bars.
You change this setting by clicking in the field to the right of the display.

In this case, the whole length display corresponds to two bars, and the Minimum Length is set to 32nd notes (60 ticks).

Minimum Velocity

When the Minimum Velocity checkbox is activated, the velocity of notes is taken into account, allowing you to remove weak notes. You specify the minimum velocity (for notes to be kept) in the value display.

Remove when under

This setting is only available when both Minimum Length and Minimum Velocity is activated. By clicking in this field, you select whether both the length and the velocity criteria must be met for notes to be deleted, or whether one of the criteria will suffice.

OK and Cancel

Clicking OK performs the automatic delete according to the rules set up. Clicking Cancel closes the dialog without deleting notes.

Delete Controllers

This function removes all MIDI controllers from the selected MIDI parts.

Delete Continuous Controllers

This function removes all "continuous" MIDI controller events from the selected MIDI parts. Therefore, "on/off" events such as sustain pedal events are not removed.

Restrict Polyphony

Selecting this item opens a dialog in which you can specify how many "voices" are used (for the selected notes or parts). Restricting the polyphony this way is useful when you have an instrument with limited polyphony and want to make sure all notes will be played. The effect is achieved by shortening notes as required, so that they end before the next note starts.

Thin Out Data

Thins out MIDI data. Use this to ease the load on your external MIDI devices if you have recorded very dense controller curves, etc.

You can also manually thin out the controller data by using the quantize function in the Key Editor.

Extract MIDI Automation

This is an extremely useful function as it allows you to quickly and easily convert the continuous controllers of your recorded MIDI parts into MIDI track automation data, making them available for editing in the Project window.

PROCEDURE

1. Select the desired MIDI part containing the continuous controller data.

2. On the MIDI menu, open the Functions submenu and select "Extract MIDI Automation".

3. In the Project window, open the automation tracks for the respective MIDI track. You will find that an automation track has been created for each of the continuous controllers in the part.

RESULT

NOTE

In the MIDI editors, the controller data will automatically be removed from the controller lane.

This function can only be used for continuous controllers. Data such as Aftertouch, Pitchbend, or SysEx cannot be converted to MIDI track automation data.

NOTE

MIDI controller automation is also affected by the Automation Merge Mode.

Reverse

This function inverts the order of the selected events (or of all events in the selected parts) rhythmically, causing the MIDI music to play backwards. Note that the effect is different from reversing an audio recording. With MIDI, the individual notes will still play as usual in the MIDI instrument – it is only the order of playback that is changed. Technically, this function reverses the Note On message of a note within a part or selection.

Mirror

This function inverts the order of the selected events (or of all events in the selected parts) graphically. Technically, this function turns a Note On message into a Note Off message and vice versa which can lead to rhythmic inaccurancies 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** is the default MIDI editor, presenting 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 **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 **Score Editor** shows MIDI notes as a musical score and offers basic score editing and printing.

RELATED LINKS

Opening MIDI editors

PROCEDURE

1. Do one of the following:
   - Select one or several MIDI parts.
   - Select a whole MIDI track without selecting parts.

2. Do one of the following:
   - To open the **Key Editor**, select **MIDI > Open Key Editor**.
   - To open the **Drum Editor**, select **MIDI > Open Drum Editor**.
   - To open the **Score Editor**, select **MIDI > Scores > Open Score Editor**.
   - To open the default MIDI editor, double-click a part.

RESULT

The selected editor opens and displays the selected parts or tracks. If no parts were selected, all parts on the track are shown.

Opening a Drum Map in the Drum Editor

You can automatically open a drum map in the **Drum Editor**.

▪ Select **Preferences > Event Display > MIDI** and activate **Edit as Drums when Drum Map is assigned**.

RELATED LINKS

Changing the Default MIDI Editor

When you double-click a MIDI part, the default MIDI editor opens. The **Key Editor** is the default MIDI editor. You can set any MIDI editor as the default MIDI editor.

PROCEDURE

1. Click **File > Preferences**.
2. Select **Event Display > MIDI**.
3. From the **Default Edit Action** pop-up menu, select the MIDI editor that you want to use.
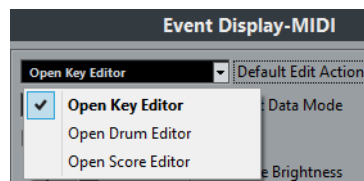
4. Click **OK**.

Common MIDI Editor Functions

You can use the tools and functions within the MIDI editors to process MIDI parts in various ways.

Changing the Display Format for the Ruler

By default, the ruler shows the timeline in the display format that is selected on the transport panel.

You can change the display format for the ruler. Click the arrow button to the right of the ruler and select an option from the pop-up menu.

RELATED LINKS

Zooming in MIDI Editors

The MIDI editors provide several zooming options:

- Zoom sliders

- **Zoom** tool

- Via **Edit > Zoom**.

When you use the **Zoom** tool for zooming, you can determine if you want to zoom horizontal only or horizontal and vertical at a time.

- To activate/deactivate the corresponding option, select **File > Preferences > Editing > Tools** and activate/deactivate **Zoom Tool Standard Mode: Horizontal Zooming Only**.

Using Cut and Paste

You can use the **Cut**, **Copy**, and **Paste** options from the **Edit** menu to move or copy material within a part or between different parts.

- To insert note events at the project cursor position without affecting existing notes, select **Edit > Paste**.

- To insert note events at the project cursor position, move, and if necessary split the existing note events to make room for the pasted notes, select **Edit > Range > Paste Time**.
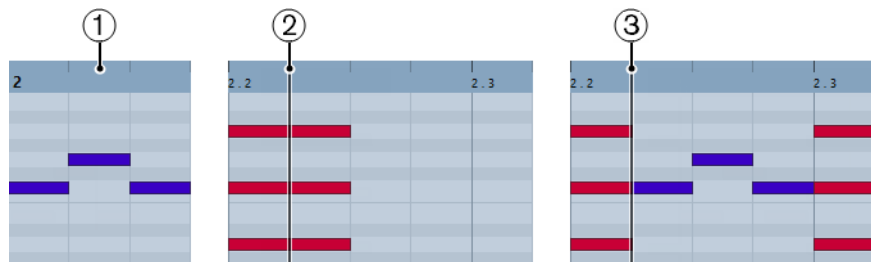
1) Data on clipboard
2) Cursor position
3) Pasted data at cursor position

Following the Project Cursor During Playback

Auto-Scroll allows the event display to scroll during playback, keeping the project cursor visible in the window.

Auto-Scroll in MIDI editors is independent of the Auto-Scroll function in the **Project Window**.

▪ To activate/deactivate Auto-Scroll, click **Auto-Scroll** ⇥⁎.

Soloing a MIDI Editor

▪ To only hear the parts of a particular MIDI editor during playback, activate **Solo Editor** ⦵.

Acoustic Feedback

If **Acoustic Feedback** is activated, individual notes are automatically played back (auditioned) when you move or transpose them, or when you create new notes by drawing. This makes it easier to hear what you are doing.

▪ To activate acoustic feedback, activate **Acoustic Feedback** 🔉 on the toolbar.

Handling Note Events

Coloring Notes and Events

You can select different color schemes for the note events in the MIDI editor.

The following options are available on the **Event Colors** pop-up menu on the toolbar:

Velocity

The note events get different colors depending on their velocity values.

Pitch

The note events get different colors depending on their pitch.

Channel

The note events get different colors depending on their MIDI channel value.

Part

The note events get the same color as their corresponding part in the **Project** window. Use this option when you are working with two 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.).

Chord Track

The note events get different colors depending on whether they match the current chord, scale, or both.

For all of the options except **Part**, the pop-up menu also contains a **Setup** option. This option opens a dialog in which you can specify the colors that are associated with velocities, pitches, or channels.

Selecting Note Events

The selected MIDI editor determines which of the following methods apply.

Do one of the following:

- Use the **Object Selection** tool ▸ to drag a selection rectangle around the note events that you want to select. You can also click individual events.

- Select **Edit > Select** and select one of the options.

- To select the previous or next note event, use the left or right arrow keys.

- To select several notes, press [Shift] and use the arrow keys.

- To select all notes of a certain pitch, press [Ctrl]/[Command] and click on a key in the keyboard display to the left.

- To select all the following note events of the same pitch/staff, press [Shift] and double-click a note event.

RELATED LINKS

Selecting Note Events using the Select Submenu

The **Select** submenu offers you several options to select note events.

To open the **Select** submenu, select **Edit > Select**.

All

Selects all note events in the edited part.

None

Deselects all note events.

Invert

Inverts the selection. All selected note events are deselected and all notes that were not selected are selected instead.

In Loop

Selects all note events that are partially or completely inside the boundaries of the left and right locators (only visible if locators are set).

From Start to Cursor

Selects all note evens 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 currently 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 currently 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

Muting Note Events

You can mute individual note events in a MIDI editor. Muting individual notes allows you to exclude note events from playback.

Do one of the following:

▪ Click on a note event with the **Mute** tool.

▪ Drag a rectangle with the **Mute** tool, enclosing all note events that you want to mute.

▪ Select the note events and select **Edit > Mute**.

▪ To unmute a note event, click it or enclose it with the **Mute** tool. You can also select a note event and select **Edit > Unmute**.

Muted notes are dimmed in the note display.
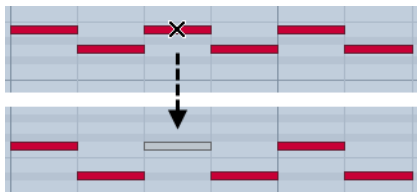
Toggle Selections

▪ To toggle selected elements within a selection rectangle, press [Ctrl]/[Command] and enclose the same elements within a new selection rectangle.

Once you release the mouse button, the previous selection is deselected and vice versa.
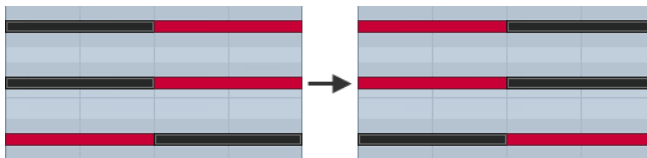
Deleting Note Events

▪ To delete note events, click on them with the **Erase** tool or select them and press [Backspace].

Cutting Note Events

The **Trim** tool allows you to cut off the end or the beginning of note events.

PROCEDURE

1. Select the **Trim** tool ✎ on the toolbar.
2. Do one of the following:
   ▪ To trim the end of a single note event, click on the note event.
   ▪ To trim the beginning of a single note event, press [Alt]/[Option] and click the note event.
   ▪ To trim several note events, click and drag with the mouse across the note events.
   ▪ To set the same start and end time for all edited note events, press [Ctrl]/[Command] and vertically drag along the note events.

Editing Note Events on the Info Line

You can move, resize, transpose, 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]/[Command] and change a value on the info line.

- To adjust the pitch or velocity of note events via your MIDI keyboard, click in the **Pitch** or **Velocity** fields on the info line, and play a note on your MIDI keyboard.

  If you have several note events selected and change a value, all selected events are changed by the set amount.

Duplicating and Repeating Note Events

You can duplicate and repeat note events in the same way as events in the **Project** window.

- To duplicate the selected note events, hold down [Alt]/[Option] and drag the note events to a new position.

  If **Snap** is activated, it determines to which positions you can copy notes.

- To copy the selected note events and place them directly behind the original, select **Edit > Functions > Duplicate**.

  If several note events are selected, all of them are copied as one unit, maintaining the relative distance between the note events.

- To create a number of copies of the selected note events, select **Edit > Functions > Repeat**, specify the number, and click **OK**.

  You can also press [Alt]/[Option] and drag the right edge of the note events to the right to create copies of the note events.
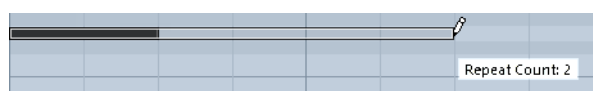
Finding Exact Positions with Snap

The Snap function restricts horizontal movement and positioning to certain positions. This helps you find exact positions in the note display when editing note events in a MIDI editor. Affected operations include moving, duplicating, drawing, sizing, etc.

- To activate/deactivate snap, click **Snap** ⋈.

  If you select the **Bars+Beats** display format, the snap grid is set by the quantize value on the toolbar. This makes it possible to snap to straight note values and to swing grids that have been set up in the **Quantize Panel**.

  If you select any of the other display formats, positioning is restricted to the displayed grid.

Setting Velocity Values

When you draw note events in the MIDI editor, the note events get the velocity value that is set in the **Insert Velocity** field on the toolbar. There are different methods to set the velocity.

- Use the **Edit Velocity** tool modifier. The cursor changes into a speaker, and next to the note, a field with the Note Velocity slider shows the value. Move the mouse pointer up or down to change the value.

  Value changes are applied to all selected notes.

  For this, a tool modifier must be assigned for the **Edit Velocity** action. To see or edit the tool modifier, select **File > Preferences > Editing > Tool Modifiers > Select Tool**.

- Open the **Insert Velocity** pop-up menu and select a velocity value.

  On this menu, you can also select **Setup** and specify custom velocity values for the pop-up menu.

- Double-click the **Insert Velocity** field on the toolbar and enter a velocity value.

- Assign key commands to **Insert Velocity 1-5** and use them.

  This allows you to quickly switch between different velocity values when you enter note events.

Handling Several MIDI Parts

- To activate a part for editing, open the **Currently Edited Part** menu and select a part.
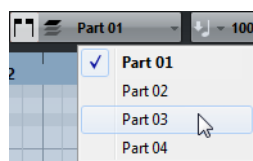
  When you select a part from the list, it is automatically active and centered in the note display.

- To zoom in on an active part, select **Edit > Zoom > Zoom to Event**.

- To display defined borders for the active part, activate **Show Part Borders**.
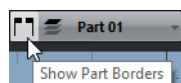
  If this option is activated, all parts, except the active part, are grayed out.

- To restrict editing operations to the active part, activate **Edit Active Part Only**.
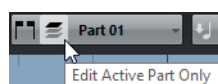
▪ To change the size of the part, drag the part borders.

The part borders display the name of the active part.

If the part that you open for editing is a shared copy, any editing that you perform affects all shared copies of this part. In the **Project** window, shared copies are indicated by an equal sign in the top right corner of the part.

Looping MIDI Parts

The **Independent Track Loop** function allows you to loop a MIDI part independent 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.

   If the **Independent Track Loop** button is not visible, right-click the toolbar and select **Independent Track Loop** from the menu.

   If you have set up a loop range in the **Project** window, it is hidden from the ruler in the MIDI editor.
2. [Ctrl]/[Command]-click in the ruler to specify the start of the independent track loop.
3. [Alt]/[Option]-click in the ruler to specify the end of the independent track loop.

RESULT

The independent loop range is indicated in a different color.

The start and end of the loop range are displayed on the status line.

AFTER COMPLETING THIS TASK

To repeat the events of the loop range and fill up the active MIDI part select **MIDI > Repeat Loop**.

Key Editor

The **Key Editor** is the default MIDI editor. It displays notes graphically in a piano roll-style grid. The **Key Editor** allows for detailed editing of notes and non-note events, such as MIDI controllers.
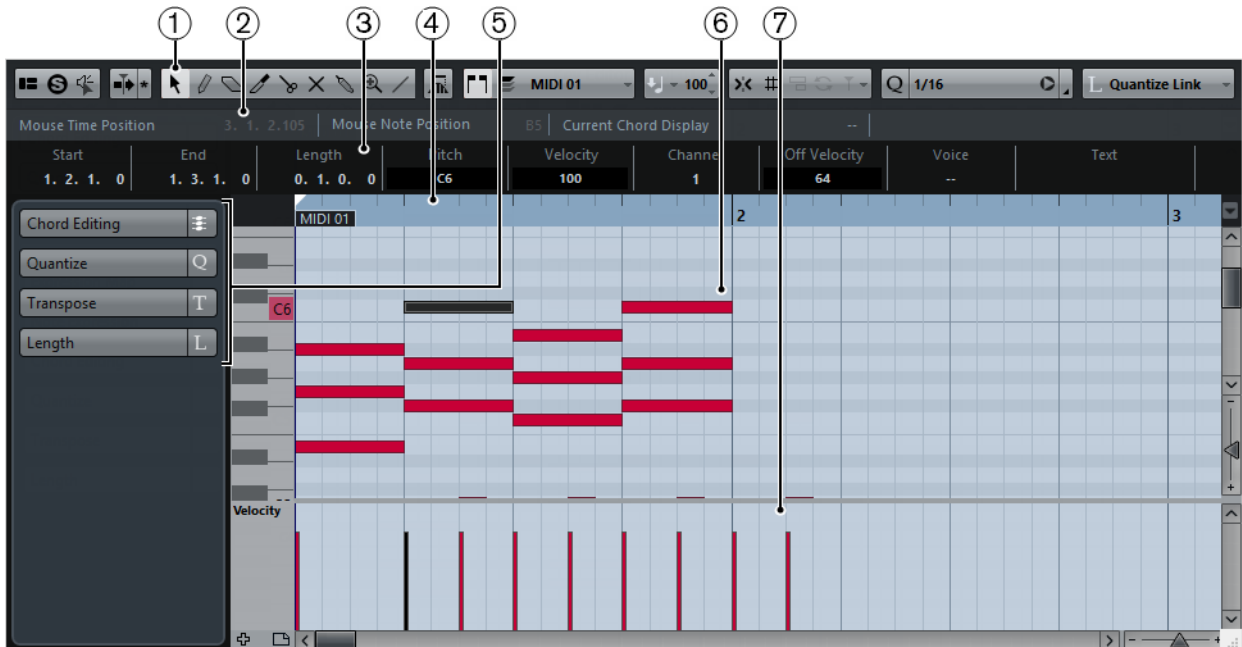
1) **Toolbar**

Contains tools and settings.

2) **Status line**

Informs about the mouse time position, mouse note position, and current chord display.

3) **Info line**

Displays note event information about a selected MIDI note.

4) **Ruler**

Displays the time line.

5) **Key Editor Inspector**

Contains tools and functions for working with MIDI data.

6) **Note display**

Contains a grid in which MIDI notes are displayed as boxes.

7) **Controller display**

The area below the note display consists of one or multiple controller lanes.

Toolbar

The toolbar contains tools and settings for the **Key Editor**.

- To show or hide the toolbar elements, right-click the toolbar and activate or deactivate the elements.

Static Buttons

Set up Window Layout

Allows you to show/hide specific window sections, for example, the **Status Line**, the **Info Line**, the **Inspector**, etc. Which sections are available, depends on the MIDI editor.

Solo Editor

If this button is activated, you hear only the edited MIDI parts during playback.

Acoustic Feedback

If this button is activated, individual notes are automatically played back when you move or transpose them, or when you create them by drawing.

Auto Scroll

Auto Scroll

If this button is activated, the project cursor is always visible in the window.

Tool Buttons

Object Selection

Allows you to select events.

Draw

Allows you to draw events.

Erase

Allows you to delete events.

Trim

Allows you to resize selected events by moving their start or end positions in steps according to the **Length Quantize** value.

Split

Allows you to split a MIDI event.

Mute

Allows you to mute events.

Glue

Allows you to glue together events of the same pitch.

444

Zoom

Allows you to zoom in/out. Hold [Alt]/[Option] and click to zoom out.

Line

Allows you to create a series of contiguous events.

Time Warp

Allows you to adjust the tempo track so that material with a musical time base can be matched to material with a linear time base.

Independent Track Loop

Independent Track Loop

Activates/Deactivates the independent track loop for the edited part.

Auto Select Controllers

Auto Select Controllers

If this button is activated and a note is selected in the editor, the corresponding controller data is also automatically selected.

Multiple Part Controls

Show Part Borders

If this button is activated, the part borders are shown in the editor.

Edit Active Part Only

If this button is activated, editing operations are applied only to the active part.

Currently Edited Part

This pop-up menu lists all parts that are currently open in the editor. This allows you to select a part for editing.

Insert Velocity

Insert Velocity

Allows you to specify a velocity value for new notes.

Nudge Palette

Trim Start Left

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

Trim Start Right

Decreases the length of the selected element by moving its start to the right.

Move Left

Moves the selected element to the left.

Move Right

Moves the selected element to the right.

Trim End Left

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

Trim End Right

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

Snap/Quantize

The following options are available on the **Snap/Quantize** menu:

Snap On/Off

Activates/Deactivates the snap function.

Grid

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

Grid Relative

If this option is activated, events keep their relative positions to the grid when they are moved.

Events

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

Shuffle

Shuffle allows you to change the order of adjacent events. If you drag the first one to the right, past the second event, the two events change places.

Magnetic Cursor

If this option is activated, the project cursor is magnetic. When you drag an event near the cursor, the event is aligned with the cursor position.

Grid + Cursor

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

Events + Cursor

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

Grid + Events + Cursor

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

Iterative Quantize On/Off

Activates/Deactivates iterative quantize.

Quantize Presets

Allows you to select a quantize or a groove preset.

Apply Quantize

Applies the quantize settings.

Open Quantize Panel

Opens the **Quantize Panel**.

Step/MIDI Input

Step Input

Activates/Deactivates the **Step Input** mode.

MIDI Input/Note Expression MIDI Input

Activates/Deactivates **MIDI Input** modes.

Move Insert Mode

Activates/Deactivates the **Move Insert** mode. For this function, **Step Input** must be activated.

Record Pitch

If **Step Input** is activated, use this button to determine that the pitch is included when you insert notes.

Record NoteOn Velocity

If **Step Input** is activated, use this button to determine that NoteOn Velocity is included when you insert notes.

Record NoteOff Velocity

If **Step Input** is activated, use this button to determine that NoteOff Velocity is included when you insert notes.

Event Colors

Event Colors

Allows you to select a color scheme for the events in the editor.

Hide Colors

Allows you to hide the colors.

Status Line

The status line is displayed below the toolbar. It displays important information about the mouse position.

To show or hide the status line, click **Set up Window Layout** ▣ on the toolbar, and activate or deactivate **Status Line**.

Mouse Time Position　1. 3. 1. 0 | Mouse Note Position　Side Stick (C#1) | Current Chord Display　**Asus4/7** | Track Loop Start　3. 3. 1. 0 | Track Loop End　1. 1. 1. 0

Mouse Time Position

Displays the exact time position of the mouse pointer, depending on the selected ruler display format. This lets you edit or insert notes at exact positions.

Mouse Note Position

Displays the exact pitch of the mouse pointer position. This facilitates finding the right pitch when entering or transposing notes.

Current Chord Display

When the project cursor is positioned over notes that form a chord, the chord is displayed here.

Independent Track Loop

A mini-cycle, affecting only the MIDI part that is being edited. If **Independent Track Loop** is activated, MIDI events within the loop range are repeated continuously.

RELATED LINKS

Info Line

The info line shows values and properties of the selected events. If several notes are selected, the values for the first note are displayed in color.

To show or hide the info line, click the **Set up Window Layout** ▣ button on the toolbar, and activate or deactivate **Info Line**.

Start	End	Length	Pitch	Velocity	Channel	Off Velocity	Voice	Text
1. 2. 1. 0	1. 3. 1. 0	0. 1. 0. 0	A5	100	1	64	Alto	Project 05

Length and position values are displayed in the selected ruler display format.

RELATED LINKS

Inspector

The Inspector is located to the left of the note display. The inspector contains tools and functions for working with MIDI data.

Chord Editing (Cubase Elements only)

Allows you to enter chords instead of single notes.

Quantize

Allows you to access the main quantize parameters. These are identical with the functions on the **Quantize** panel.

Transpose

Allows you to access the main parameters for transposing MIDI events.

Length

Contains length-related options, similar to the **Functions** submenu of the **MIDI** menu.

- To change the length of the selected MIDI events or all events of the active part if no events are selected, use the **Scale Length/Legato** slider.
  At the maximum value the notes reach the beginning of the next note.

- To make the new length settings permanent, use the **Freeze MIDI Lengths** button to the right of the **Scale Length/Legato** slider.

- To fine-tune the distance between consecutive notes, use the **Overlap** slider.
  At **0 Ticks**, the **Scale Legato** slider extends each note so that it reaches the next note exactly. Positive values cause the notes to overlap and negative values allow you to define a small gap between the notes.

- To use the **Legato** function or slider to extend a note until the next selected note, activate **Between Selected**.
  This is identical with activating the **Legato Mode: Between Selected Notes Only** option in the **Preferences** dialog.

RELATED LINKS
Quantize Panel on page 167
Other MIDI functions on page 427

Note Display

The note display is the main area in the **Key Editor**. It contains a grid in which note events are shown as boxes.
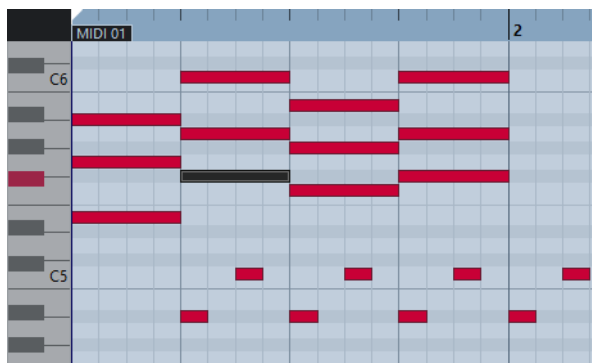
The width of a box corresponds to the note length. The vertical position of a box corresponds to the note number (pitch), with higher note events higher up in the grid. The piano keyboard helps you to find the right note number.

Controller Display

The area at the bottom of the **Key Editor** window is the controller display. It contains the controller events.

The controller display consists of one or several controller lanes that show one of the following properties or event types:

- Velocity values of the notes

- **Pitchbend** events

- **Aftertouch** events

- **Poly Pressure** events

- **Program Change** events

- **System Exclusive** events

- Any type of continuous controller event

Velocity values are shown as vertical bars in the controller display. Each velocity bar corresponds to a note event in the note display. Higher bars correspond to higher velocity values.

Events other than velocity values are shown as blocks. The block corresponds to the event values. The beginning of an event is marked by a curve point.

NOTE

Unlike note events, controller events have no length. The value of a controller event in the display is valid until the beginning of the next controller event.

Key Editor Operations

This section describes the principal editing operations within the **Key Editor**.

Drawing Note Events with the Draw Tool

The **Draw** tool allows you to insert single note events in the note display. The horizontal position of the note event corresponds to the time, the vertical position to the pitch.

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.
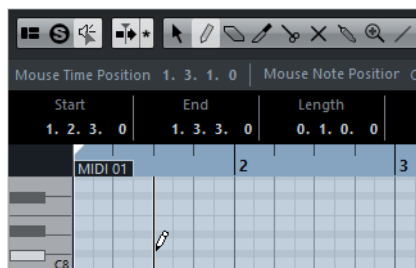
▪   To draw a note, click in the note display.

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.

Drawing Note Events with the Line Tool

In the note display, the **Line** tool allows you to draw a series of contiguous note events along different line shapes.

- To create contiguous note events, click and drag in the note display.

- To restrict movement to horizontal, press [Ctrl]/[Command] and drag.

  The notes have the same pitch.

If **Snap** is activated, the note events and controller events are positioned and sized according to the **Quantize** and **Length Quantize** values.

RELATED LINKS
The Line Tool Modes on page 452

The Line Tool Modes

The **Line** tool allows you to create a series of contiguous note events along different line shapes. You can also edit multiple controller events simultaneously.

To select a different line mode, click the **Line** button and select a mode from the menu.
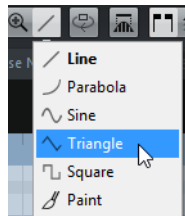
The following line modes are available:

Line

If this option is activated, you can click and drag to insert note events in the note display along a straight line in any angle. Use this option to edit controller data along a straight line in the controller display.

Parabola, Sine, Triangle, Square

These modes insert note events along different curve shapes.

Paint

This mode allows you to insert note events by painting in the note display.

Moving and Transposing Note Events

There are several options to move and transpose note events.

- To move note events in the editor, select the **Object Selection** tool and drag them to a new position.

  All selected note events are moved, maintaining their relative positions. **Snap** is taken into account.

- To allow only horizontal and vertical movement, hold down [Ctrl]/[Command] while dragging.

- To move note events via the **Nudge Palette** buttons on the toolbar, select the note events and click a **Nudge Palette** button.

  This moves the selected note events by the amount that is set on the **Quantize** pop-up menu.

- To move note events to the project cursor position, select the note events and select **Edit > Move to > Cursor**.

- To move a note event via the info line, select a note event and edit the **Position** or **Pitch** on the info line.

- To transpose note events, select the note events and use the up and down arrow keys.

- 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 and down arrow keys.

NOTE

- When you move selected note events to a different position, any selected controllers for these note events move accordingly.

- You can also adjust the position of note events by quantizing.

RELATED LINKS
Transpose on page 422

Resizing Note Events

Do one of the following:

- To resize the note event, position the **Object Selection** tool at the start or the end of a note event and drag the mouse cursor to the left or right.

- To move the start or end positions of the selected notes in steps according to the **Length Quantize** value on the toolbar, use the **Trim Start/End** buttons on the **Nudge** palette.

- Select the note and adjust its length on the info line.

- Select the **Draw** tool ✎ 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 the **Trim** tool and cut off the end or the beginning of note events.

RELATED LINKS

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 the **Trim** ✎ button on the toolbar.

   The mouse pointer changes to a knife symbol.

2. To edit a single note, click on it with the **Trim** tool.

   The range between the mouse pointer and the end of the note will be removed. Use the mouse note info on the status line to find the exact position for the trim operation.

3. To edit several notes, click and drag with the mouse across the notes.
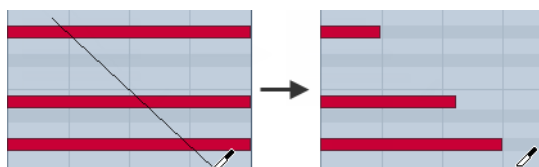
   By default, the Trim tool cuts off the end of notes. To trim the beginning of notes, press [Alt]/[Option] while dragging. When dragged across several notes, a line is displayed. The notes will be trimmed along this line. If you press [Ctrl]/[Command] while dragging, you will get a vertical trim line, allowing you to set the same start or end time for all edited notes. You can change the Trim tool key commands in the Preferences dialog (Editing–Tool Modifiers page).

Splitting Note Events

Do one of the following:

- To split the note at the position that you point, click on a note with the **Split** tool.

  If several notes are selected, they are all split at the same position. The snap setting is taken into account.

- To split all notes that are intersected by the project cursor position, select **Edit > Functions > Split at Cursor**.

- To split all notes that are intersected by the left or right locator at the locator positions, select **Edit > Functions > Split Loop**.

Gluing Note Events

You can glue together note events of same pitch.

- To glue note events, select the **Glue** tool and click on a note event.

  The note event is glued together with the next note event of the same pitch. The result is a long note event that spans from the start of the first note to the end of the second note and with the properties (velocity, pitch, etc.) of the first note event.

Changing the Pitch of Chords (Cubase Elements only)

You can use the chord type buttons to change the pitch of chords.

PROCEDURE

1. In the **Inspector**, open the **Chord Editing** section.
2. In the note display, select the notes that you want to edit.
   If the chord is recognized, the root note, chord type, and tensions are indicated in the **Chord Type** field. This also works with arpeggiated notes.
3. In the **Chord Editing** section, activate one of the **Triads** buttons or **4-Note Chords** buttons.
   The selected notes are transposed so that they fit the selected chord type.
4. Use the up or down arrow keys on your computer keyboard to change the pitch of the chord.

Changing the Voicing of Chords (Cubase Elements only)

PROCEDURE

1. In the **Inspector**, open the **Chord Editing** section.
2. In the note display, select the notes that you want to edit.
3. In the **Chord Editing** section, use the **Inversions** buttons and the **Drop Notes** buttons to change the voicing.

RESULT

The selected notes are transposed so that they fit the selected chord type.

Chord Editing Section (Cubase Elements only)

The **Chord Editing** section in the **Inspector** allows you to insert and edit chords, and change voicings.
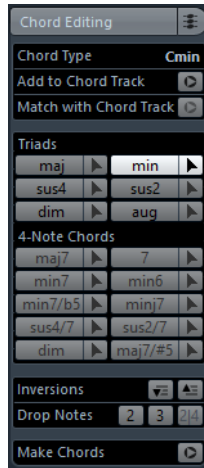
Chord Type

Shows the chord type of the selected chords.

Add to Chord Track

Adds the chord indicated in the **Chord Type** field to the chord track. The chord event is inserted at the position on the chord track that corresponds to the position of the MIDI notes. Any existing chord events at this position are overwritten.

Match with Chord Track

Applies the chord events from the chord track to the selected notes in the MIDI editor. The chord event that is effective at the position of the first selected note is applied to the selected notes, which are then transposed. Only the basic chord type is applied. Tensions are not taken into account.

Only the first effective chord event is applied.

Triads

Allows you to insert triads to the note display. You can also click one of the **Triads** buttons to transpose the selected notes so that they fit to the selected chord type.

4-Note Chords

Allows you to insert 4-note chords to the note display. You can also click one of the **4-Note Chords** buttons to transpose the selected notes so that they fit to the selected chord type.

Inversions - Move highest note to bottom

Inverts the highest note of a chord. The corresponding notes are transposed by as many octaves as needed.

Inversions - Move lowest note to top

Inverts the lowest note of a chord. The corresponding notes are transposed by as many octaves as needed.

Drop Notes - Move the second highest note an octave lower

Moves the second highest note of a chord down by one octave.

Drop Notes - Move the third highest note an octave lower

Moves the third highest note of a chord down by one octave.

Drop Notes - Move the second and fourth highest notes an octave lower

Moves the second and fourth highest notes of a chord down by one octave.

Make Chords

Performs a chord analysis of the selected notes. If nothing is selected, the whole MIDI part is analyzed.

Inserting Chords (Cubase Elements only)

You can use the tools in the **Chord Editing** section of the **Inspector** to insert and edit chords.

PROCEDURE

1. In the Inspector, open the **Chord Editing** section.
2. Select **Tool** ▶ to the right of the chord type that you want to insert.
3. Click in the note display, drag to the left or right to determine the length of the chord. Drag up or down to determine its pitch.

    To change the chord type while you insert chords, hold [Alt]/[Option] and drag up or down.

    If **Acoustic Feedback** is activated, you hear the chord while dragging. A tooltip indicates the root note and chord type of the inserted chord. **Snap** and **Length Quantize** are taken into account.

Applying Chord Events to Note Events (Cubase Elements only)

You can apply chord events from the chord track to notes in the MIDI editor.

PREREQUISITE

Create a chord track and add chord events.

PROCEDURE

1. Open the MIDI editor.

2. In the **Inspector**, open the **Chord Editing** section.

3. Select **Match with Chord Track**.

RESULT

The first chord event of the chord track is applied to the selected notes. Only the basic chord type is applied. Tensions are not taken into account.

Drum Map Handling (Cubase Elements only)

When a drum map is assigned to a MIDI or instrument track, the **Key Editor** displays the drum sound names as defined by the drum map. This allows you to use the **Key Editor** for drum editing, for example, when editing drum note lengths or when editing several parts to identify drum events.

The name of the drum sound is displayed in the following locations:

▪   On the info line in the **Pitch** field.

▪   On the status line in the **Mouse Note Position** field.

▪   In the note event if the zoom factor is high enough.

▪   When dragging a note event.

Editing Note Events via MIDI

Since you can directly hear your editing results. Editing the properties of note events via MIDI can be a quick way to, for example, set the velocity value of a note event.

PROCEDURE

1. In the **Key Editor**, select the note event that you want to edit.

2. Click **MIDI Input** 🔘 on the toolbar.
    Editing via MIDI is enabled.

3.   Use the note buttons on the toolbar to decide which properties are changed by the MIDI input.

You can enable editing of pitch, note-on and/or note-off velocity. For example, with the following setting, the edited notes get the pitch and velocity values of the notes input via MIDI, but the note-off velocities remain as they are.

4.   Play a note on your MIDI instrument.

RESULT

The selected note gets the pitch, velocity and/or note-off velocity of the played note. The next note in the edited part is automatically selected, to allow quick editing of a series of notes.

AFTER COMPLETING THIS TASK

To try another setting, select the note again and play a note on your MIDI instrument.

Step Input

Step input, or step recording, allows you to enter note events or chords one at a time without worrying about the exact timing. This is useful, for example, when you know the part that you want to record but are not able to play it exactly as you want it.

PROCEDURE

1.   On the toolbar, activate the **Step Input** button.

2.   Use the note buttons to the right to determine which properties are included when you insert the note events.

For example, you can include the velocity and/or note-off velocity of the played notes. You can also deactivate the pitch property, in which case all notes get a pitch C3, no matter what you play.

3.   Click anywhere in the note display to set the start position of the first note event or chord.

The step input position is shown as a blue line in the note display.
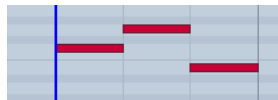
4.   Specify the note event spacing and length with the **Quantize** and **Length Quantize** pop-up menus.

The note events that you insert are positioned according to the **Quantize** value and have the length of the **Length Quantize** value.

NOTE

If **Length Quantize** is set to **Quantize Link**, the note length is also determined by the **Quantize** value.

5.   Play the first note event or chord on your MIDI instrument.

The note event or chord appears in the editor and the step input position advances by one quantize value step.

NOTE

If **Move Insert Mode** is activated, all note events to the right of the step input position are moved to make room for the inserted note event or chord.

6.   Continue in the same way with the rest of the note events or chords.

You can adjust the **Quantize** or **Length Quantize** values, to change the timing or note event lengths. You can also move the step input position manually by clicking anywhere in the note display.

To insert a rest, press the right arrow key on the computer keyboard. This advances the step input position by one step.

7.   When you are done, click the **Step Input** button again to deactivate step input.

Using the Controller Display

The Controller Display displays the controller events. By default, the controller display has a single lane that shows one event type at a time. However, you can add as many lanes as you need. The use of several controller lanes allows you to view and edit different controllers at the same time.

Each MIDI track has its own controller lane setup (number of lanes and selected event types). When you create new tracks, they get the last used controller lane setup.
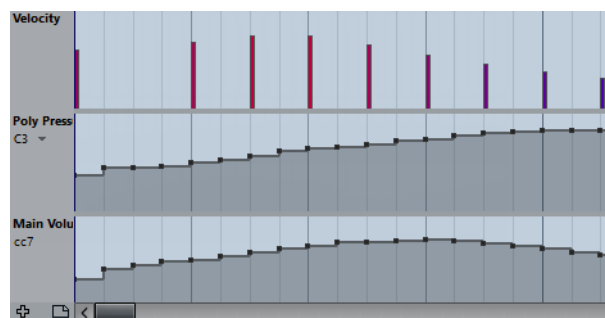
The controller display with three lanes.

▪   To add a controller lane, click the **Create Controller Lane** button ⊞ or open the **Controller Selection and Functions** menu and select **Create Controller Lane**.
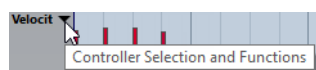
▪   To remove a controller lane, open the **Controller Selection and Functions** pop-up menu and select **Remove this Lane**.

This hides the lane from view. It does not affect the events in any way.

If you remove all lanes, the controller display is hidden. To bring it back, click the **Create Controller Lane** button.

- To show/hide multiple lanes, open the **Controller Lane Setup** pop-up menu, and select **Show/Hide Controller Lanes**.

- To reset the controller display to show only the velocity lane, open the **Controller Lane Setup** pop-up menu, and select **Velocity only**.

- To automatically show all controller lanes with controller data, open the **Controller Lane Setup** pop-up menu, and select **Show Used Controllers**.

Selecting the Event Type

Each controller lane shows one event type at a time. You can select which event type to display on a controller lane.

- To select which type is displayed, open the **Controller Selection and Functions** pop-up menu and select an event type.
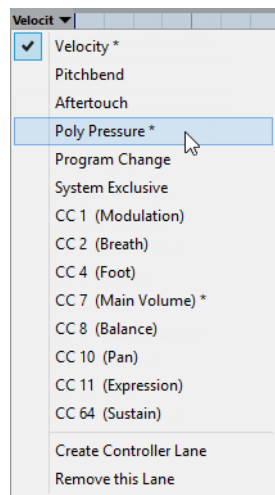
Setting up Available Continuous Controllers

In the **MIDI Controller Setup** dialog, you can specify which continuous controllers are available for selection.

NOTE

The **MIDI Controller Setup** dialog can be opened from different areas in the program. The settings are global, that is, the setup you choose here affects all areas of the program where MIDI controllers can be selected.

PROCEDURE

1. Select **Controller Selection and Functions > Setup**.
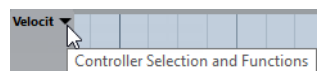
2.   In the **MIDI Controller Setup** dialog, move all the controllers that you need to the list on the left and move the controllers that you do not need to the list on the right.
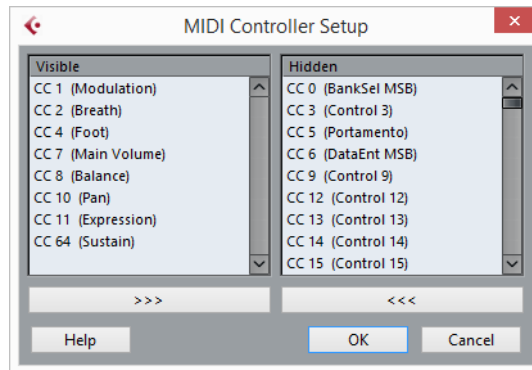
3.   Click **OK**.

Handling Controller Lane Presets

Once you have made up your controller lane setup, you can save it as a controller lane preset. For example, you can have a preset with one velocity lane and another preset with a combination of several controller lanes, such as velocity, pitchbend, or modulation.

Saving a Controller Lane Setup as Preset

You can save a controller lane setup via the **Controller Lane Setup** pop-up menu.

PROCEDURE

1.   Click the **Controller Lane Setup** button ▭.
2.   Select **Add Preset**.
   The **Type In Preset Name** dialog opens.
3.   Enter a name for the preset.
4.   Click **OK**.

RESULT

Your controller lane setup is now available as a controller lane preset.

NOTE

To apply a saved preset, open the **Controller Lane Setup** pop-up menu and select the preset.

NOTE

 To remove or rename a preset, open the **Controller Lane Setup** pop-up menu and select **Organize Presets**. A dialog opens, where you can remove and rename presets.

Adding Events in the Controller Display

- To create a new event in the velocity controller display, click with the **Draw** tool or the **Line** tool in the event display.

- To create a new event for any other event type, click with the **Draw** tool or the **Line** tool in the controller display.

Editing Events in the Controller Display

All controller values can be edited with the **Draw** tool or the **Line** tool. If you have selected more than one controller event on a controller lane, the controller lane editor is displayed.

- To edit events in the velocity controller display, use the **Draw** tool or the **Line** tool and drag the event.
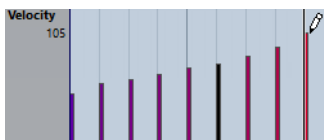
  The **Object Selection** tool automatically switches to the **Draw** tool when you move the pointer into the controller display.

  When you move the pointer in the controller lane, the corresponding event type value is displayed below the event type name.

  In velocity mode, no new controller events are added this way.

- To edit the values of any other event type in the controller display, press [Alt]/[Option] and drag, or use the **Draw** tool or the **Line** tool and drag.
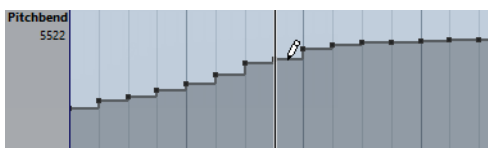
  When you move the pointer inside a controller lane, the event type value changes corresponding to the pointer movement. The event type value is displayed below the event type name, left of the controller display.

- If there is more than one note at the same position, their velocity bars overlap on the controller lane. If none of the notes are selected, all notes at the same position are set to the same velocity value when you draw.

  To edit the velocity of only one of the notes at the same position, first select the note in the note display.

- To select all events on a controller lane, open the **Controller Lane Setup** pop-up menu and select the **Select all Controller Events** option.

- To use the **Object Selection** tool to select events in the velocity controller display, press [Alt]/[Option].

- To cut, copy, and paste events in the controller display select the event and select **Edit > Cut/Copy/Paste**.

  When pasting events, the events on the clipboard are added, starting at the project cursor position and maintaining their relative distances. If a pasted event ends up at the same position as an existing event of the same type, the old event is replaced.

NOTE

If the speaker icon (Acoustic Feedback) is activated on the toolbar, the notes are played back when you adjust the velocity. This allows you to audition your changes.

RELATED LINKS

Editing Events in the Controller Display Using the Line Tool

You can draw and edit events in the controller display with the **Line** tool.

Line Mode

In **Line** mode, you can draw events in a straight line.

- To draw a straight line in the controller display, click where you want the ramp to start and drag the cursor to where you want the ramp to end.
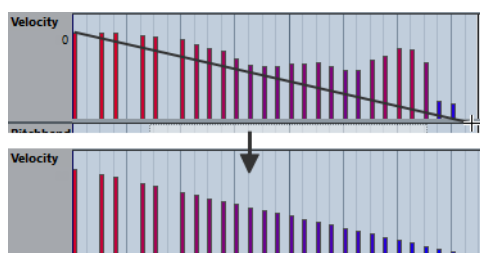
NOTE

 If **Snap** is activated the **Length Quantize** value determines the density of created controller curves. For very smooth curves, use a small **Length Quantize** value or deactivate **Snap**. To avoid over-dense controller curves, which can cause MIDI playback to stutter, use a medium-low density.

Parabola Mode

In **Parabola** mode, you can draw events on a parabola curve. This gives more natural curves and fades. The result depends on the direction from which you draw the parabola.
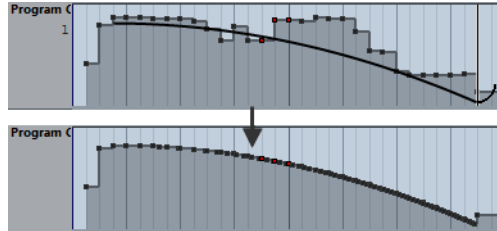
You can use modifier keys to determine the shape of the parabola curve.

- To reverse the parabola curve, press [Ctrl]/[Command].

- To change the position of the whole curve, press [Alt]/[Option].

- To increase or decrease the exponent, press [Shift].

NOTE

If **Snap** is activated the **Length Quantize** value determines the density of created controller curves. For very smooth curves, use a small **Length Quantize** value or deactivate **Snap**. To avoid over-dense controller curves which can cause MIDI playback to stutter, use a medium-low density.

Sine, Triangle, and Square Mode

The **Sine**, **Triangle**, and **Square** modes create events with values that are aligned to continuous curves.
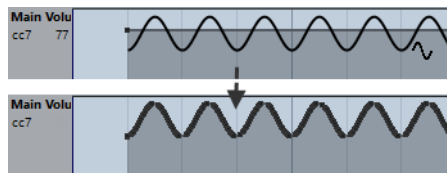
In these modes, the quantize value determines the period of the curve that is the length of one curve cycle and the **Length Quantize** value determines the density of the events. The lower the **Length Quantize** note value becomes, the smoother the curve gets.

NOTE

If **Length Quantize** is set to **Quantize Link** and you enter data in **Sine**, **Triangle** or **Square** mode, the density of the events depends on the Zoom factor.

You can use modifier keys to determine the shape of the curve.

- To change the phase of the beginning of the curve, press [Ctrl]/[Command].

- To change the position of the whole curve, press [Alt]/[Option]-[Ctrl]/[Command].

- To change the maximum position of the triangle curve or the pulse of the square curve in **Triangle** and **Square** mode, press [Shift]-[Ctrl]/[Command]. This creates sawtooth curves.

- You can also set the curve period freely by holding down [Shift] when you insert events in Sine, Triangle, or Square mode. Activate Snap, [Shift]-click and drag to set the length of one period. The period length will be a multiple of the quantize value.

Paint Mode

In **Paint** mode, you can draw in multiple notes.

The quantize value determines the density of created controller curves. For very smooth curves, use a small quantize value or deactivate **Snap**. However, this creates a large number of MIDI events, which can cause MIDI playback to stutter in some situations. A medium-low density is often sufficient.

Editing Events using the Draw Tool

You can draw and edit events in the controller display with the **Draw** tool. The **Draw** tool has the same functionality as the **Line** tool in **Paint** mode.

- To change the velocity of a single note, click on its velocity bar and drag the bar up or down.

    NOTE

    When you move the pointer inside a controller lane, the event type value changes corresponding to the pointer movement. The event type value is displayed below the event type name, left of the controller display.

Using Continuous Controllers

When a continuous controller is selected for a controller lane, additional data is displayed on the controller lane. This is due to the fact that MIDI controller data can be recorded or entered either for an automation track or for a MIDI part.

If automation data already exists for a controller, this is indicated by an asterisk that is displayed next to the controller name on the **Controller Selection and Functions** pop-up menu.
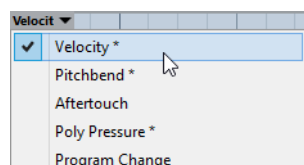
If the automation data is controller data that you have entered in a MIDI editor, the data is displayed on the controller lane. If the controller data was recorded on an automation track in the **Project** window, no events are displayed on the controller lane.

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 currently being used at the starting point of the part so that you can choose the start value accordingly.

Poly Pressure Events

Poly Pressure events are events that belong to a specific note number (key). That is, each poly pressure event has two editable values: the note number and the amount of pressure.

When **Poly Pressure** is selected on the **Controller Selection and Functions** pop-up menu, there are two value fields to the left of the controller display, one for the note number and one for the amount.

Adding Poly Pressure Events

PROCEDURE

1.   Open the **Controller Selection and Functions** pop-up menu and select **Poly Pressure**.
2.   Click on the keyboard display to set the note number.
     The selected note number is displayed in the upper value field to the left of the controller display.

     NOTE

     This only works for the topmost lane. If you have selected Poly Pressure for several controller lanes, you have to type in the note number directly in the lower value field to the left of each lane.

3.   Use the **Draw** tool to add a new event.

Editing Poly Pressure Events

PROCEDURE

1.   Open the **Controller Selection and Functions** pop-up menu and select **Poly Pressure**.
2.   Click on the arrow button next to the note number to the left of the controller lane.
     A pop-up menu appears and lists all note numbers for which there already are Poly Pressure events.
3.   Select a note number from the pop-up menu.
     The Poly Pressure events for the selected note number are shown in the controller lane.
4.   Use the **Draw** tool to edit the events.
     To edit events without adding new events, press [Ctrl]/[Command]+[Alt]/[Option] while drawing.

Controller Lane Editor

The controller lane editor allows you to perform additional scaling operations for selection ranges on existing controller curves.

In the controller lane editor, the following smart controls appear on the borders of the editor:

Editing mode	To activate this mode	Description
Move Vertically	Click in an empty area on the upper border of the editor.	This mode allows you to move the entire curve up or down, which is useful to boost or attenuate an otherwise perfect curve.
Scale Vertically	Click the smart control in the middle of the upper border of the editor.	Use this mode to relatively scale the curve, that is to raise or lower the values in percent.
Tilt the left/right part of the curve	Click the smart control in the upper left/right corner of the editor.	These modes allow you to tilt the left or the right part of the curve. This is useful if the curve form is exactly the way you want it, but the start or end needs to be boosted or attenuated a bit.
Compress the left/right part of the curve	[Alt]/[Option]-click the smart control in the upper left/right corner of the editor.	These modes allow you to compress the left or the right part of the curve.
Scale Around Absolute Center	Click the smart control in the middle of the right border of the editor.	This mode allows you to scale the curve around the absolute center, i.e. horizontally around the center of the editor.
Scale Around Relative Center	[Alt]/[Option]-click the smart control in the middle of the right border of the editor.	This mode allows you to scale the curve relative to its center.
Stretch	Click and drag in the lower part of the editor (not available for velocity lanes).	This allows you to stretch the selected controller events.

Editing Selection Ranges

The controller lane editor allows you to perform additional scaling operations for selection ranges on existing controller curves.

- To open the controller lane editor, use the **Object Selection** tool to create a selection rectangle on the controller lane, encompassing the controller events that you want to edit.

  For velocity lanes, press [Alt]/[Option] to get the **Object Selection** tool.

- To switch the controller lane editor to vertical scaling mode, press [Shift] and click on any of the smart controls.

- To move the whole selection up/down or left/right, click on a controller event inside the editor and drag the curve.

- To restrict the direction to horizontal or vertical movement, depending on the direction in which you start dragging, press [Ctrl]/[Command] when dragging.

NOTE

Snap is taken into account when moving controller curves horizontally.

Moving Events in the Controller Display

You can move events in a controller lane.

PROCEDURE

1. Select the events that you want to move with the **Object Selection** tool.
   You can also click and drag to create a selection rectangle that encompasses the events that you want to move.

2. Click on a curve point inside the selection and drag the events.

RESULT

The events inside the selection are moved to the new position. Snap is taken into account.

NOTE

If **Auto Select Controllers** is activated in the **Key Editor** toolbar, selecting notes also selects the corresponding controller events. Moving events in the note display also moves the corresponding controller events.

RELATED LINKS

Deleting Events in the Controller Display

IMPORTANT

If there is more than one note at the same position, there is only one visible velocity bar. Make sure that you delete only the notes that you want to delete.

- To delete events, click on them with the **Erase** tool or select them and press [Backspace].

  You can also delete notes by deleting their velocity bars in the controller display.

  If there is more than one note at the same position, there may still only be one velocity bar visible. Make sure that you delete only the desired notes!

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Selecting Controllers within the Note Range

A note range lasts until the start of the next note or the end of the part. Selected controllers for notes are moved when the corresponding notes are moved.

You can select the controllers within the range of the selected notes.

- To always select the corresponding controllers when you select a note event, activate **Auto Select Controllers** .

- To select the controllers within the note range, select **Edit > Select > Select Controllers in Note Range**.

  For this to work, only 2 notes have to be selected.

Score Editor

The **Score Editor** shows MIDI notes as a musical score.
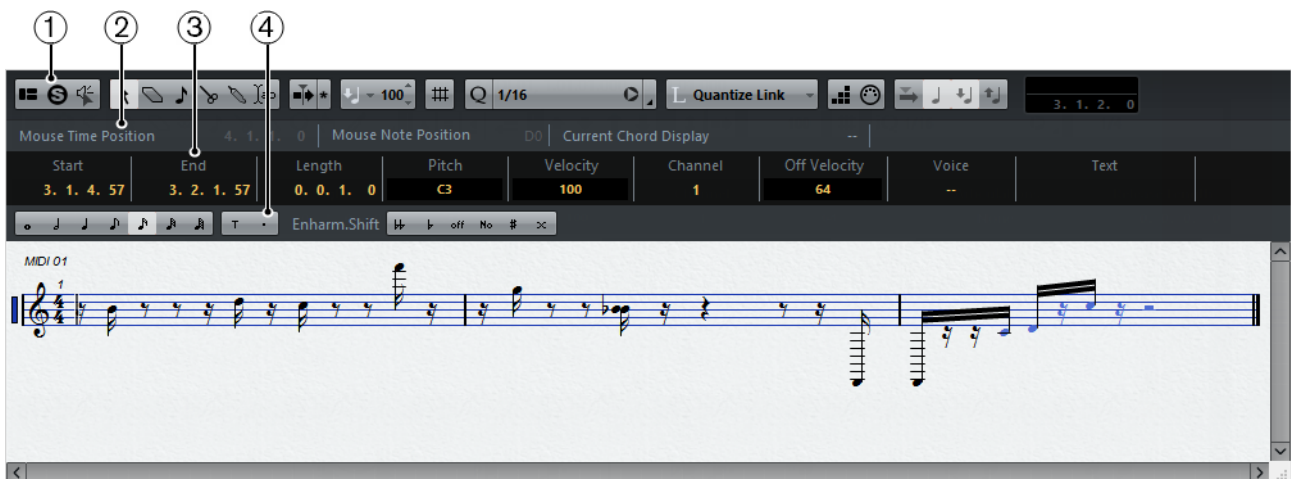
1) Toolbar
2) Status line
3) Info line
4) Extended toolbar

- To open one or several parts in the **Score Editor**, select one or several tracks or any number of parts, and select **MIDI > Scores > Open Score Editor**.

  If you have selected parts on several tracks, you get one staff for each track. The staves are tied together by bar lines and placed in the order of the tracks in the **Project** window.

- To rearrange the staves, close the editor and in the **Project** window, rearrange the tracks. Then reopen the **Score Editor**.

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.

Tool Buttons

Object Selection

Allows you to select events.

Erase

Allows you to delete events.

Insert Note

Allows you to insert notes in the score display.

Split

Allows you to split a MIDI event.

Glue

Allows you to glue together events of the same pitch.

Insert Text

Allows you to insert text in the score display.

Auto Scroll

Auto Scroll

If this button is activated, the project cursor is always visible in the window.

Insert Velocity

Insert Velocity

Allows you to specify a velocity value for new notes.

Snap/Quantize

Snap Type

Allows you to select the snap type.

If **Grid** is activated, events snap to exact grid positions when they are moved.

If **Grid Relative** is activated, events keep their relative positions to the grid when they are moved.

Iterative Quantize On/Off

Activates/Deactivates iterative quantize.

Quantize Presets

Allows you to select a quantize or a groove preset.
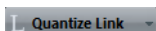
Apply Quantize

Applies the quantize settings.

Open Quantize Panel

Opens the **Quantize Panel**.

Length Quantize

Determines the event length for the **Length Quantize** function.

Step/MIDI Input

Step Input

Activates/Deactivates the **Step Input** mode.

MIDI Input/Note Expression MIDI Input

Activates/Deactivates **MIDI Input** modes.

Move Insert Mode

Activates/Deactivates the **Move Insert** mode. For this function, **Step Input** must be activated.

Record Pitch

If **Step Input** is activated, use this button to determine that the pitch is included when you insert notes.

Record NoteOn Velocity

If **Step Input** is activated, use this button to determine that NoteOn Velocity is included when you insert notes.

Record NoteOff Velocity

If **Step Input** is activated, use this button to determine that NoteOff Velocity is included when you insert notes.

RELATED LINKS
Using the Setup options on page 627

Status Line

The status line is displayed below the toolbar. It displays important information about the mouse position and the chord displays. 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**.

Mouse Time Position

Displays the exact time position of the mouse pointer, depending on the selected ruler display format. This lets you edit or insert notes at exact positions.

Mouse Note Position

Displays the exact pitch of the mouse pointer position. This facilitates finding the right pitch when entering or transposing notes.

Current Chord Display

When the project cursor is positioned over notes that form a chord, this chord is displayed here.

Info Line

The info line shows values and properties of the selected MIDI notes. If several notes are selected, the values for the first note are displayed in color.

To show or hide the info line, click **Set up Window Layout** 🔳 on the toolbar, and activate or deactivate **Info Line**.

Start	End	Length	Pitch	Velocity	Channel	Off Velocity	Voice	Text
6. 4. 4. 0	7. 1. 1. 0	0. 0. 1. 0	C-2	100	1	64	Alto	Note

RELATED LINKS

Extended Toolbar

The extended toolbar contains note value buttons and enharmonic shift buttons.

To show or hide the extended toolbar, click the **Set up Window Layout** 🔳 button on the toolbar, and activate or deactivate **Tools**.

Note Value Buttons

Allows you to select a note value for input. The **T** and **.** options are for triplet and dotted note values.

The selected note value is displayed in the Length value field on the toolbar and in the **Insert Note** tool shape.

To resize all selected notes to the same note value, press [Ctrl]/[Command] 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

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Score Display

The main area of the **Score Editor** window shows the notes in the edited parts on one or several staves. Parts on different tracks are shown on different staves.

- If you are editing one or several parts on the same track, as much of them as possible is shown on several staves, comparable with a score on paper.

- If you are editing parts on several tracks, they are put on a grand staff. A grand staff is composed of multiple staves that are tied together by bar lines.

- The number of bars that are displayed on the screen depends on the size of the window and the number of notes in each bar.

- The end of the last part is indicated by a double bar line.

All MIDI input is directed to one of the tracks, which is called the active staff. The active staff is indicated by a blue 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, double-click in the area to the left of the staff, or select a staff and select **MIDI > Scores > Staff Settings**.

NOTE

The time signature follows the time signatures that are set in the **Tempo Track** editor. These settings are common to all tracks/staves in the score.

Staff Mode

The **Staff Mode** determines how the staff is shown.

- In **Single** mode, all notes in the part are shown in the same staff.

- In **Split** mode, the part is split on the screen into a bass and treble clef, as in a piano score.

   The **Split Point** value determines where you want the split to occur. Notes above and including the split note appear on the upper staff, and notes below the split note appear on the lower staff.

Before and after setting a split at C3.

Display Quantize

This section allows you to change the way Cubase displays scores.

IMPORTANT

These display values are only used for the graphical display in the **Score Editor**. They do not affect the playback.

Notes

Determines the smallest note value to be displayed and the smallest position to be recognized and properly displayed. Set this to the smallest significant note position used in your music.

For example, if you have notes on odd sixteenth note positions, set this value to 16. The **T** values are for triplet note values. This setting is partly overridden by **Auto Quantize**.

Rests

This value is used as a recommendation. Cubase does not display rests smaller than this value, except where necessary. In effect, this setting also determines how the length of notes is displayed. Set this value according to the smallest note value (length) that you want to be displayed for a single note, positioned on a beat.

Auto Quantize

Allows you to make your score look as legible as possible. **Auto Quantize** allows you to mix straight notes with tuplets (triplets) in a part. However, **Auto Quantize** also uses the (display) quantize value. If there is no appropriate note value for a certain note or group of notes, it uses the set quantize value is used to display it.

Generally, only activate this option if your music contains mixed triplets and straight notes. If the part is imprecisely played and/or complex, **Auto Quantize** may have a problem figuring out exactly what you mean.

Dev.

If this option is activated, triplets/straight notes are detected even if they are not exactly on the beat. However, if you know that your triplets/straight notes are perfectly recorded, either through quantizing or entered by hand, deactivate this option.

This option is only available if **Auto Quantize** is activated.

Adapt

If this option is activated, the program guesses that when one triplet is found, there are probably more triplets surrounding it. Activate this option if not all of your triplets are detected.

This option is only available if **Auto Quantize** is activated.

Clef and Key

In this section, you can set the correct clef and key.

Clef/Key Display

Allows you to select the clef or key via the scrollbar.

Lower Staff

Sets the clef and key to the lower staff.

Auto Clef

If this option is activated, Cubase attempts to guess the correct clef, judging from the pitch of the music.

Display Transpose

In this section, you can specify a separate display transpose setting for each staff (track). This transposes the notes in the score without affecting how the notes are played back. This allows you to record and play back a multi staff arrangement and still score each instrument according to its own transposition.

Semitones

Allows you to manually set a display transpose value.

Instrument

Allows you to select the instrument for which you are scoring.

Interpretation Options

In this section, you can make additional settings on how the score is displayed.

Clean Lengths

If this option is activated, notes that are considered to be chords are shown with identical lengths. Longer notes are displayed shorter than they are. Notes with very short overlaps are also cut off. This is similar to the **No Overlap** option, but with a more subtle effect.

No Overlap

If this option is activated, one note is never shown as overlapping another, lengthwise. This allows long and short notes that start at the same point to be displayed without ties. The long notes are cut off in the display. This makes the music more legible.

A sample measure with **No Overlap** deactivated.

A sample measure with **No Overlap** activated.

Syncopation

If this option is activated, syncopated notes are shown in a more legible way.
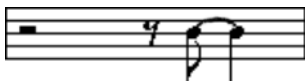
A dotted quarter note at the end of a bar when **Syncopation** is deactivated.
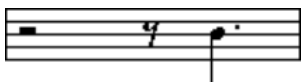
A dotted quarter note at the end of a bar when **Syncopation** is activated.

Shuffle

If this option is activated and you have played a shuffle beat, the beat is displayed as straight notes, not as triplets. This is very common in jazz notation.

Quantize Value

When you move the mouse pointer over the score, the **Mouse Time Position** field on the status line tracks your movement and shows the current position in bars, beats, sixteenth 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 eighth 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.
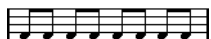
With the quantize value set to 1/8, you can only input notes at eighth note positions.

You can also use the **Quantize Panel** to create other quantize values, irregular grids, etc.

Creating Notes

In the score display, the **Insert Note** tool allows you to create notes. However, you must first set the note value (length) and spacing.

PROCEDURE

1. Set the note value in one of the following ways:
    - Click the note symbols on the extended toolbar.
    - Select an option from the **Length Quantize** pop-up menu on the toolbar.

2. Select the **Insert Note** tool.
    If you selected the note value via the extended toolbar buttons, the **Insert Note** tool is automatically selected.

3. Open the **Quantize Presets** pop-up menu on the toolbar and select a quantize value.

4. Move the mouse over the staff to find the correct position.

    The position is displayed on the **Mouse Time Position** display on the status line. The position snaps to the grid that is defined by the quantize value.

5. Move the mouse vertically to find the correct pitch.

    The **Mouse Note Position** display on the status line shows the pitch at the pointer position.

6. Click in the staff.

RESULT

The note appears in the score. The notes get the insert velocity value that is set in the **Insert Velocity** field on the toolbar.

NOTE

If the notes that you enter appear to have the wrong note value you may have to adjust the **Display Quantize** settings. For example, you enter a 1/32 note that is displayed as a 1/16 note.

RELATED LINKS

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 the **Acoustic Feedback** button on the toolbar.

3. Select the notes that you want to move.

4. Click one of the selected notes and drag it to a new position and/or pitch.

    The horizontal movement of the note is snaps to the current quantize value. The position boxes on the toolbar show the position and pitch for the dragged note.

    To restrict moving to one direction, press [Ctrl]/[Command] 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]/[Option] and drag the notes to their new position.
      To restrict moving to one direction, press [Ctrl]/[Command] 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]/[Command]-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 474
Editing Note Events on the Info Line on page 440

Splitting and Gluing Note Events

▪   To split 2 notes that are strung together by a tie, click on the tied note head with the **Cut** tool.
     The note is divided into two, 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 shift the display of selected notes. For example, an F# (F sharp) is instead shown as a Gb (G flat) and vice versa.

PROCEDURE
1.   Select the notes that you want to shift.
2.   Click one of the enharmonic shift buttons on the extended toolbar.

RELATED LINKS
Extended Toolbar on page 473

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 arrow keys to move the cursor, delete characters with the [Delete] or [Backspace] keys, press [Return] when your 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]/[Option] 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.

1. Do one of the following:
   - To change the settings for a specific text block, click on the text with the **Object Selection** tool.
   - To set the default settings for all new text blocks, unselect any selected text block and change the settings.
2. Select **MIDI > Scores > Set Font**.
3. In the **Font Settings** dialog, make your settings.
4. Click **Apply**.
5. Optional: Select another text block, adjust the settings, and click **Apply**.

Set Font Dialog

In this dialog, you can change the font, size, and style of the text that you have added to the score display.

To open the **Set Font** dialog, select **MIDI > Scores > Set Font**.

Font

Allows you to specify the font for the text. Which fonts are available on the pop-up menu depends on the fonts that you have installed on your computer.

IMPORTANT

Do not use the Steinberg fonts. These are special fonts used by the program, for example, for score symbols, and not suited for common text.

Size

Sets the size of the text.

Frame

Allows you to enclose the text in a rectangular (box) or oval frame.

Font Options

Determine whether the text is formatted bold, italic, and/or underlined.

Printing the Score

PROCEDURE

1. Open the parts that you want to print in the **Score Editor**.

2. Select **File > Page Setup** and make sure that all your printer settings are correct.

   IMPORTANT

   If you change your setting for paper size, scale, and margins now, the score may change its look.

3. Click **OK**.

4. Select **File > Print**.

5. In the **Print** dialog, make your settings.

6. Click **Print**.

Drum Editor

The **Drum Editor** is similar to the Key Editor, but takes advantage of the fact that with drum parts, each key corresponds to a separate drum sound. This is the editor to use when you are editing drum or percussion parts.
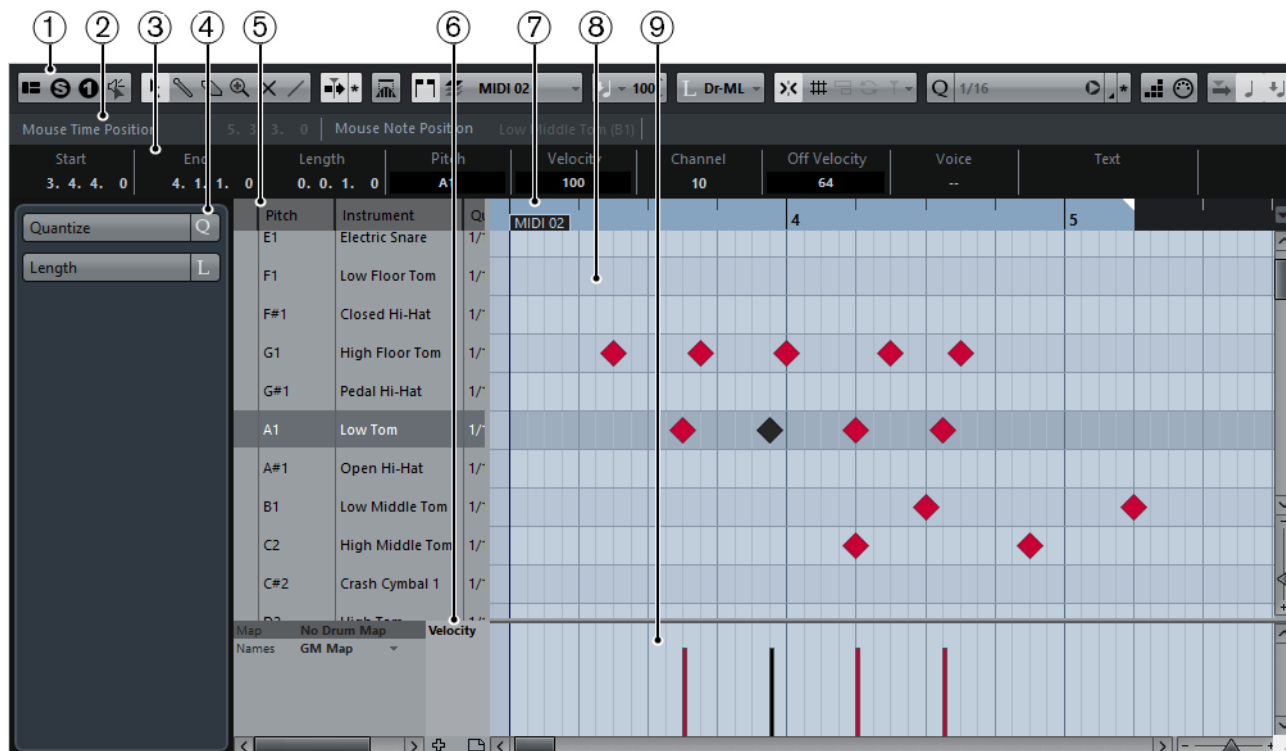
1) **Toolbar**

Contains tools and settings.

2) **Status line**

Informs about the mouse time position, mouse note position, and current chord display.

3) **Info line**

Displays note event information about a selected MIDI note.

4) **Drum Editor Inspector**

Contains tools and functions for working with MIDI data.

5) **Drum sound list**

Lists all drum sounds.

6) **Drum map**

Lets you select the drum map for the edited track or a list of drum sound names.

7) **Ruler**

Displays the time line.

8) **Note display**

Contains a grid in which MIDI notes are displayed as boxes.

9) **Controller display**

The area below the Note display consists of one or multiple controller lanes.

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

Set up Window Layout

Allows you to show/hide specific window sections, for example, the Status Line, the Info Line, the Inspector, etc. Which sections are available, depends on the editor.

Solo Editor

If this button is activated, you hear only the edited MIDI parts during playback.

Solo Instrument

If this button is activated, you hear only the selected MIDI part during playback.

Acoustic Feedback

If this button is activated, individual notes are automatically played back when you move or transpose them, or create them by drawing.

Tool Buttons

Object Selection

Allows you to select events.

Drumstick

Allows you to draw events.

Erase

Allows you to delete events.

Zoom

Allows you to zoom in/out. Hold [Alt]/[Option] and click to zoom out.

Mute

Allows you to mute events.

Line

Allows you to create a series of contiguous events.

Time Warp

Allows you to adjust the tempo track so that material with a musical time base can be matched to material with a linear time base.

Auto Scroll

Auto Scroll

If this button is activated, the project cursor is always visible in the window.

Independent Track Loop

Independent Track Loop

Activates/Deactivates the independent track loop for the edited part.

Auto Select Controllers

Auto Select Controllers

If this button is activated and a note is selected in the editor, the corresponding controller data is also automatically selected.

Multiple Part Controls

Show Part Borders

If this button is activated, the part borders are shown in the editor.

Edit Active Part Only

If this button is activated, editing operations are applied only to the active part.

Currently Edited Part

This pop-up menu lists all parts that are currently open in the editor. This allows you to select a part for editing.

Insert Velocity

Insert Velocity

Allows you to specify a velocity value for new notes.

Inserted Notes Length

Insert Length

Allows you to determine the length of an inserted note.

Nudge Palette

Trim Start Left

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

Trim Start Right

Decreases the length of the selected element by moving its start to the right.

Move Left

Moves the selected element to the left.

Move Right

Moves the selected element to the right.

Trim End Left

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

Trim End Right

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

Transpose Palette

Move up

Transposes the selected event or chord up by a half note.

Move down

Transposes the selected event or chord 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/Quantize

The following options are available on the **Snap/Quantize** menu:

Snap On/Off

Activates/Deactivates the snap function.

Grid

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

Grid Relative

If this option is activated, events keep their relative positions to the grid when they are moved.

Events

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

Shuffle

Shuffle allows you to change the order of adjacent events. If you drag the first one to the right, past the second event, the two events change places.

Magnetic Cursor

If this option is activated, the project cursor is magnetic. When you drag an event near the cursor, the event is aligned with the cursor position.

Grid + Cursor

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

Events + Cursor

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

Grid + Events + Cursor

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

Iterative Quantize On/Off

Activates/Deactivates iterative quantize.

Quantize Presets

Allows you to select a quantize or a groove preset.

Apply Quantize

Applies the quantize settings.

Open Quantize Panel

Opens the **Quantize Panel**.

Use Global Quantize
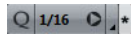
If this button is activated, drum notes are quantized according to the global quantize value on the toolbar. If the button is deactivated, the individual quantize values for the drum sounds are used.

Step/MIDI Input

Step Input

Activates/Deactivates the **Step Input** mode.

MIDI Input/Note Expression MIDI Input

Activates/Deactivates **MIDI Input** modes.

Move Insert Mode

Activates/Deactivates the **Move Insert** mode. For this function, **Step Input** must be activated.

Record Pitch

If **Step Input** is activated, use this button to determine that the pitch is included when you insert notes.

Record NoteOn Velocity

If **Step Input** is activated, use this button to determine that NoteOn Velocity is included when you insert notes.

Record NoteOff Velocity

If **Step Input** is activated, use this button to determine that NoteOff Velocity is included when you insert notes.

Event Colors

Event Colors

Allows you to select a color scheme for the events in the editor.

Hide Colors

Allows you to hide the colors.

Status Line

The status line is displayed below the toolbar. It displays important mouse information.

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

Mouse Time Position 1. 3. 1. 0 | Mouse Note Position Side Stick (C#1) | Track Loop Start 3. 3. 1. 0 | Track Loop End 1. 1. 1. 0

Mouse Time Position

Displays the exact time position of the mouse pointer, depending on the selected ruler display format. This lets you edit or insert notes at exact positions.

Mouse Note Position

Displays the exact pitch of the mouse pointer position. This facilitates finding the right pitch when entering or transposing notes.

Independent Track Loop

A mini-cycle, affecting only the MIDI part that is being edited. If **Independent Track Loop** is activated, MIDI events within the loop range are repeated continuously.

RELATED LINKS
Setting Up the Independent Track Loop on page 310

Info Line

The info line shows values and properties of the selected events. If several notes are selected, the values for the first note are displayed in color.

To show or hide the info line, click the **Set up Window Layout** ▣ button on the toolbar, and activate or deactivate **Info Line**.

Start	End	Length	Pitch	Velocity	Channel	Off Velocity	Voice	Text
1. 2. 1. 0	1. 3. 1. 0	0. 1. 0. 0	A5	100	1	64	Alto	Project 05

Length and position values are displayed in the selected ruler display format.

RELATED LINKS
Editing Note Events on the Info Line on page 440
Changing the Display Format for the Ruler on page 434

Inspector

The Inspector is located to the left of the note display. The inspector contains tools and functions for working with MIDI data.

Quantize	Q
Length	L

Quantize

Allows you to access the main quantize parameters. These are identical with the functions on the **Quantize Panel**.

Length

Contains length-related options, similar to the **Functions** submenu of the **MIDI** menu.

- To change the length of the selected MIDI events or all events of the active part if no events are selected, use the **Scale Length/Legato** slider.

  At the maximum value the notes reach the beginning of the next note.

- To make the new length settings permanent, use the **Freeze MIDI Lengths** button to the right of the **Scale Length/Legato** slider.

- To fine-tune the distance between consecutive notes, use the **Overlap** slider.

  At **0 Ticks**, the **Scale Legato** slider extends each note so that it reaches the next note exactly. Positive values cause the notes to overlap and negative values allow you to define a small gap between the notes.

- To use the **Legato** function or slider to extend a note until the next selected note, activate **Between Selected**.

  This is identical with activating the **Legato Mode: Between Selected Notes Only** option in the **Preferences** dialog.

RELATED LINKS

Note Display

The note display of the **Drum Editor** displays notes as diamond symbols.

The vertical position of the notes corresponds to the drum sound list to the left, while the horizontal position corresponds to the note's position in time.

NOTE

The diamond symbols do not indicate the length of the notes, since drum sounds most often are "one-shot" samples that disregard note lengths.

Controller Display

The area at the bottom of the **Drum Editor** window is the controller display.

It consists of one or several controller lanes that show one of the following properties or event types:

▪ Velocity values of the notes

▪ Pitchbend events

▪ Aftertouch events

▪ Poly Pressure events

▪ Program Change events

▪ System Exclusive events

▪ Any type of continuous controller event

Velocity values are shown as vertical bars in the controller display. Each velocity bar corresponds to a note in the note display. Higher bars correspond to higher velocity values.
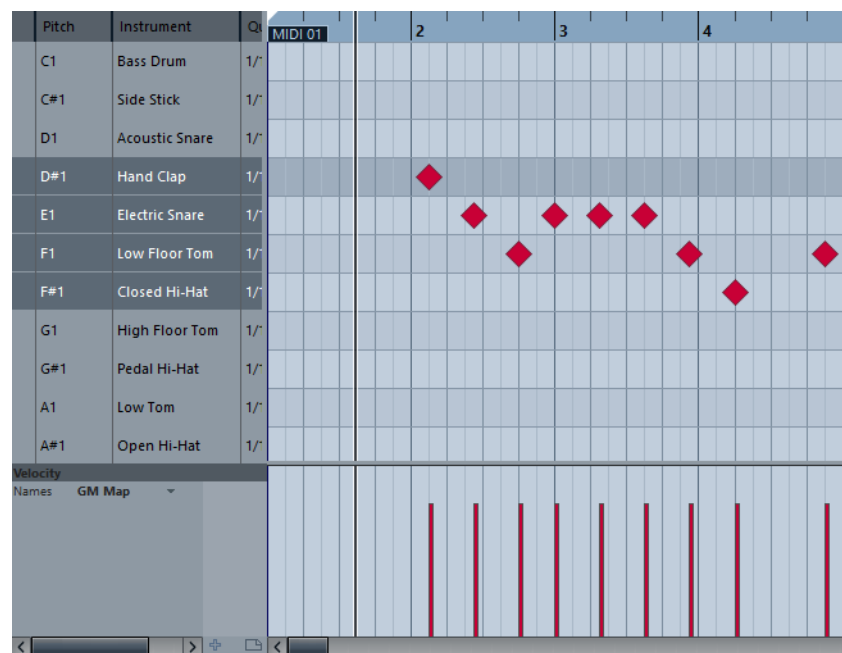
Events other than velocity values are shown as blocks. The block corresponds to the event values. The beginning of an event is marked by a curve point.

When you select a line in the drum sound list, only the velocity controller events that belong to the note events on this line are displayed in the controller display.

If you select more than one line in the drum sound list, the controller lane shows all velocity controller events for all notes on the selected lines. This is useful when you have to adjust the controller values between different drum sounds.

NOTE

Unlike note events, controller events have no length. The value of a controller event in the display is valid until the beginning of the next controller event.

Drum Sound List

The drum sound list lists all drum sounds by name and lets you adjust and manipulate the drum sound setup in various ways.

Pitch	Instrument	Quantize	Mute	I-Note	O-Note	Chan	Output
C1	Bass Drum	1/16		C1	C1	10	Track
C#1	Side Stick	1/16		C#1	C#1	10	Track
D1	Acoustic Snare	1/16	●	D1	D1	10	Track
D#1	Hand Clap	1/16		D#1	D#1	10	Track
E1	Electric Snare	1/16	●	E1	E1	10	Track
F1	Low Floor Tom	1/16		F1	F1	10	Track
F#1	Closed Hi-Hat	1/16		F#1	F#1	10	Track
G1	High Floor Tom	1/16		G1	G1	10	Track

NOTE

The number of columns in the list depends on whether a drum map is selected for the track or not.

Pitch

Actual note number of the drum sound. This is what links notes on a MIDI track to drum sounds. For example, with the GM Map, all MIDI notes with the pitch C1 are mapped to the Bass Drum sound.

Instrument

Name of the drum sound.

Quantize

This value is used when entering and editing notes.

Mute

Mute drum sounds.

I-Note

Input note for the drum sound. When this MIDI note is sent into Cubase, that is you play it, the note is mapped to the corresponding drum sound and automatically transposed according to the **Pitch** setting for the sound.

O-Note

Output note, that is the MIDI note number that is sent out every time the drum sound is played back.

Chan

MIDI channel, on which the drum sound is played back.

Output

MIDI output on which, the drum sound is played back. If you set this to **Default**, the MIDI output selected for the track is used.

RELATED LINKS
Muting Notes and Drum Sounds on page 494

Drum Map and Names Menus

Below the drum sound list are two pop-up menus that are used for selecting a drum map for the edited track or, if no drum map is selected, a list of drum sound names.
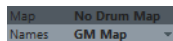
RELATED LINKS
Drum Maps on page 495

Drum Editor Operations

This section describes the principal editing operations within the **Drum Editor**.

Creating and Editing Note Events with the Drum Tool

- To create a note, select the **Drumstick** tool ✎ and click in the **Drum Editor**.

  If **Snap** is deactivated on the toolbar, the note event appears exactly where you clicked.

  If you have activated **Snap** and deactivated **Use Global Quantize** on the toolbar, the note events snap to positions according to the quantize value set for the sound in the drum sound list. You can set up different quantize values for different drum sounds.

  If **Snap** and **Use Global Quantize** are activated, the note snaps to positions according to the **Quantize** setting on the toolbar.

  The length of the inserted note is determined by the **Insert Length** setting on the toolbar. However, if this is set to **Drum-Map Link**, the note gets the length of the quantize value for the drum sound.

- To remove a note, select the **Drumstick** tool and click on an existing note.

- To audition the drum sounds, click the leftmost column of the drum sound list.

Moving and Transposing Note Events

There are several options to move and transpose note events.

- To move note events in the editor, select the **Object Selection** tool and drag them to a new position.

  All selected note events are moved, maintaining their relative positions. **Snap** is taken into account.

- To allow only horizontal and vertical movement, hold down [Ctrl]/[Command] while dragging.

- To move note events via the **Nudge Palette** buttons on the toolbar, select the note events and click a **Nudge Palette** button.

  This moves the selected note events by the amount that is set on the **Quantize** pop-up menu.

- To move note events to the project cursor position, select the note events and select **Edit > Move to > Cursor**.

- To move a note event via the info line, select a note event and edit the **Position** or **Pitch** on the info line.

- To transpose note events, select the note events and use the up and down arrow keys.

- 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 and down arrow keys.

NOTE

- When you move selected note events to a different position, any selected controllers for these note events move accordingly.

- You can also adjust the position of note events by quantizing.

RELATED LINKS
[Transpose on page 422](#)

Muting Notes and Drum Sounds

IMPORTANT

The mute state for drum sounds is part of the drum map. Therefore, any other tracks using the same map are also affected.

- To mute individual notes, click or enclose them with the **Mute** tool, or select **Edit > Mute**.

- If a drum map is selected, the drum sound list has a **Mute** column. Click in the **Mute** column for a drum sound to mute that sound.

Pitch	Instrument	Quantize	Mute	I-Note	O-Note	Chan	Output
C#2	Crash Cymbal 1	1/16	●	C#2	C#2	10	Track
D2	High Tom	1/16		D2	D2	10	Track
D#2	Ride Cymbal 1	1/16	○	D#2	D#2	10	Track
E2	Chinese Cymbal	1/16		E2	E2	10	Track

- To mute all drum sounds other than the selected one, click the **Solo Instrument** button on the toolbar.

RELATED LINKS
[Selecting a Drum Map for a Track on page 498](#)

494

Drum Maps

A drum kit in a MIDI instrument is most often a set of different drum sounds with each sound placed on a separate key. For example, the different sounds are assigned to different MIDI note numbers. One key plays a bass drum sound, another a snare, and so on.

Different MIDI instruments often use different key assignments. This can be troublesome if you have made a drum pattern using one MIDI device and then want to try it on another. When you switch devices, it is very likely that your snare drum becomes a ride cymbal or your hi-hat becomes a tom, etc., because the drum sounds are distributed differently in the two instruments.

To solve this problem and to simplify several aspects of MIDI drum kits, such as using drum sounds from different instruments in the same drum kit, Cubase features drum maps. A drum map is a list of drum sounds, with a number of settings for each sound. When you play back a MIDI track for which you have selected a drum map, the MIDI notes are filtered through the drum map before they are sent to the MIDI instrument. The map determines which MIDI note number is sent out for each drum sound and which sound is played on the receiving MIDI device.

When you want to try your drum pattern on another instrument, you simply switch to the corresponding drum map, and your snare drum sound remains a snare drum sound.

If you want to have the same drum maps included in your projects, you can load these into the template.

NOTE

Drum maps are saved with the project files. If you have created or modified a drum map, use the **Save** function to save it as a separate XML file to make it available for loading into other projects.

RELATED LINKS

Drum Map Setup Dialog

This dialog allows you to load, create, modify, and save drum maps.

To open the **Drum Map Setup** dialog, select **Drum Map Setup** from the **Map** pop-up menu or the **MIDI** menu.

	Pitch	Instrument	Quantize	M	I-Note	O-Note	Chan	Output	
Functions	C1	Bass Drum	1/16		C1	C1	10	Track	
Drum Maps	C#1	Side Stick	1/16		C#1	C#1	10	Track	
GM Map	D1	Acoustic Snare	1/16		D1	D1	10	Track	
	D#1	Hand Clap	1/16		D#1	D#1	10	Track	
	E1	Electric Snare	1/16		E1	E1	10	Track	
	F1	Low Floor Tom	1/16		F1	F1	10	Track	
	F#1	Closed Hi-Hat	1/16		F#1	F#1	10	Track	
	G1	High Floor Tom	1/16		G1	G1	10	Track	
	G#1	Pedal Hi-Hat	1/16		G#1	G#1	10	Track	
	A1	Low Tom	1/16		A1	A1	10	Track	
	A#1	Open Hi-Hat	1/16		A#1	A#1	10	Track	
	B1	Low Middle Tom	1/16		B1	B1	10	Track	
	C2	High Middle Tom	1/16		C2	C2	10	Track	
	C#2	Crash Cymbal 1	1/16		C#2	C#2	10	Track	
Output	D2	High Tom	1/16		D2	D2	10	Track	
Not Connected	D#2	Ride Cymbal 1	1/16		D#2	D#2	10	Track	
	E2	Chinese Cymbal	1/16		E2	E2	10	Track	
Close									

The list on the left shows the currently loaded drum maps. The sounds and settings of the selected drum map are displayed on the right.

NOTE

The settings for the drum sounds are the same as in the **Drum Editor**.

Output

Allows you to select the output for the drum map sounds.

Drum Sound List

Lists all drum sounds and their settings. To audition a drum sound, click the leftmost column.

NOTE

If you audition a sound in the **Drum Map Setup** dialog and the sound is set to MIDI output **Default**, the output that is selected on the **Output** pop-up menu in the lower left corner is used. When auditioning a default output sound in the **Drum Editor**, the MIDI output selected for the track is used.

The **Functions** pop-up menu contains the following options:

New Map

Adds a new drum map to the project. The drum sounds are named "Sound 1, Sound 2, etc." and have all parameters set to default values. The map is named "Empty Map".

To rename the drum map, click the name in the list and type in a new name.

New Copy

Adds a copy of the currently selected drum map to create a new drum map. You can then change the drum sound settings of the copy and rename the drum map in the list.

Remove

Removes the selected drum map from the project.

Load

Allows you to load drum maps into your project.

Save

Allows you to save the drum map that is selected in the list on disk. Drum map files have the extension `.drm`.

Edit head pairs

Allows you to customize the note pairs.

Init Display Notes

Allows you to reset the **Display Notes** entry to the original setting, that is the Pitch entry.

RELATED LINKS
Drum Map Settings on page 497
Channel and Output Settings on page 497

Drum Map Settings

A drum map consists of settings for 128 drum sounds, one for each MIDI note number.

- To get an overview of the drum map settings, open the **Drum Editor** and use the **Map** pop-up menu below the drum sound list to select the **GM Map** drum map.
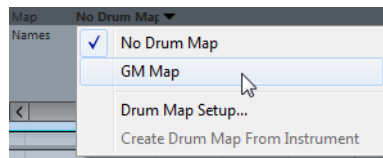
The GM map is set up according to the General MIDI standard.

You can change all drum map settings except the pitch directly in the drum sound list or in the **Drum Map Setup** dialog. These changes affect all tracks that use the drum map.

RELATED LINKS
Drum Sound List on page 492
Drum Map Setup Dialog on page 495

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]/[Command], and select a channel or output.

- If you make specific MIDI channel and output settings for all sounds in a drum map, you can switch between drum maps to send your drum tracks to another MIDI instrument.

Selecting a Drum Map for a Track

- To select a drum map for a MIDI track, open the **Map** pop-up menu in the Inspector or in the **Drum Editor** and select a drum map.

- To deactivate the drum map functionality in the **Drum Editor**, open the **Map** pop-up menu in the Inspector or in the **Drum Editor** and select **No Drum Map**.

    Even if you do not use a drum map, you can still separate sounds by name using a name list.

NOTE

Initially, the **Map** pop-up menu only contains **GM Map**.

About I-Notes, O-Notes and Pitches

Going through the following theory helps you make the most out of the drum map concept – especially if you want to create your own drum maps.

A drum map is a kind of filter that transforms notes according to the settings in the map. It does this transformation twice; once when it receives an incoming note that is when you play a note on your MIDI controller, and once when a note is sent from the program to the MIDI sound device.

The following example shows a modified drum map with a bass drum sound that has different pitch, I-note, and O-note values.

Pitch	Instrument	Quantize	Mute	I-Note	O-Note	Chan
C1	Bass Drum	1/16		A1	B0	10
C#1	Side Stick	1/16		C#1	C#1	10
D1	Acoustic Snare	1/16		D1	D1	10

I-Notes (Input Notes)

When you play a note on your MIDI instrument, the program looks for this note number among the I-notes in the drum map. If you play the note A1, the program finds that this is the I-note of the bass drum sound.

This is where the first transformation happens: the note gets a new note number according to the pitch setting for the drum sound. In our case, the note is transformed to a C1 note, because that is the pitch of the bass drum sound. If you record the note, it is recorded as a C1 note.

For example, you can place drum sounds near each other on the keyboard so that they can be easily played together, move sounds so that the most important sounds can be played from a short keyboard, play a sound from a black key instead of a white. If you never play your drum parts from a MIDI controller but draw them in the editor you do not need the I-note setting.

O-Notes (Output Notes)

The next step is the output. This is what happens when you play back the recorded note, or when the note you play is sent back out to a MIDI instrument in realtime (MIDI Thru):

The program checks the drum map and finds the drum sound with the pitch of the note. In our case, this is a C1 note and the drum sound is the bass drum. Before the note is sent to the MIDI output, the second transformation takes place: the note number is changed to that of the O-note for the sound. In our example, the note sent to the MIDI instrument is a B0 note.

The O-note settings let you set things up so that the bass drum sound really plays a bass drum. If you are using a MIDI instrument in which the bass drum sound is on the C2 key, you set the O-note for the bass drum sound to C2. When you switch to another instrument (in which the bass drum is on C1) you want the bass drum O-note set to C1. Once you have set up drum maps for all your MIDI instruments, you can select another drum map when you want to use another MIDI instrument for drum sounds.

Setting Pitches of Notes According to their O-Note Settings

You can set the pitch of notes according to their O-note settings. This is useful if you want to convert a track to a regular MIDI track with no drum map and still have the notes play back the correct drum sound.

It's a typical use case to export your MIDI recording as a standard MIDI file. If you first perform an O-note conversion, you make sure that your drum tracks play back as intended when they are exported.

- To perform an O-note conversion, select **MIDI > O-Note Conversion**.

RELATED LINKS
Exporting and importing standard MIDI files on page 622

Drum Name Lists

Drum name lists allow you to use the **Drum Editor** even if no drum map is selected for the edited MIDI track. The drum sound list then consists of the columns **Audition**, **Pitch**, **Instrument (drum sound name)**, and **Quantize**.

This means that you can use the drum sound names in any loaded drum map without using I-notes and O-notes.

In the drum name list mode, the names that are shown in the **Instrument** column depend on the selection on the **Names** pop-up menu at the bottom of the **Drum Editor**. The pop-up menu contains the currently loaded drum maps and **GM Map**.

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

Bulk Dumps

In any programmable device, the settings are saved as numbers in computer memory. If you change these numbers, you will change the settings. Normally, MIDI devices allow you to dump (transmit) all or some settings in the device's memory in the form of MIDI SysEx messages.

A dump is therefore, among other things, a way of making backup copies of the settings of your instrument: sending such a dump back to the MIDI device restores the settings.

If your instrument allows the dumping of a few or all of its settings via MIDI by activating some function on the front panel, this dump will probably be recordable in Cubase.

Recording a Bulk Dump

IMPORTANT

If your MIDI instrument does not offer a way to initiate a dump, you have to send a Dump Request message from Cubase to start the dump. In that case, use the **MIDI SysEx Editor** to insert the specific Dump Request message (see the instrument's documentation) at the beginning of a MIDI track. When you activate recording, the Dump Request message is played back (sent to the instrument), the dump starts and is recorded.

PROCEDURE

1. Do one of the following:
   - On Microsoft Windows, select **File > Preferences**.
   - On Mac, select the Cubase menu, and select **Preferences**.

2. In the **Preferences** dialog, select **MIDI > MIDI Filter**.

3. In the **Record** section, deactivate the **SysEx** checkbox to make sure that the recording of SysEx data is not filtered.

   This way, SysEx messages are recorded but not echoed back to the instrument. This can lead to unpredictable results.

4. Activate recording on a MIDI track and initiate the dump from the front panel of the instrument.

5. When you are done recording, select the new part and select **MIDI > Key Editor**.

6. Open the controller lane for the part.

   This allows you to check that the SysEx dump was recorded. There should be one or several SysEx events in the controller lane.

Transmitting a Bulk Dump Back to a Device

PREREQUISITE

Route the MIDI track with the System Exclusive data to the device. Check your device's documentation to find details about which MIDI channel should be used, etc.

PROCEDURE

1. Solo the track.

2. Make sure that the device is set up to receive SysEx messages.

3. If necessary, put the device in **Standby to Receive System Exclusive** mode.

4. Play back the data.

About Recording and Transmitting Bulk Dumps

- Do not transmit more data than you need. If all you want is a single program, do not send all. Otherwise, it could get too difficult to find the recognized program. Usually, you can specify exactly which data you want to send.

- If you want the sequencer to dump the pertinent sounds to your instrument whenever you load a project, put the SysEx data in a silent count-in before the project itself starts.

- If the dump is very short, which can, for example, be a single sound you can put the dump in the middle of the project to quickly re-program a device. However, you can achieve the same effect by using Program Change. This is definitely preferable, since less MIDI data is sent and recorded. Some devices may be set up to dump the settings for a sound as soon as you select it on the front panel.

- If you create parts with useful SysEx dumps, you can put these on a special muted track. To make use of these parts, drag it to an empty unmuted track and play it back.

- Do not transmit several SysEx dumps to several instruments at the same time.

- Make a note of the current device ID setting of the instrument. If you change this, the instrument may later refuse to load the dump.

Recording SysEx Parameter Changes

Often you can use SysEx to remotely change individual settings in a device, for example, opening a filter, selecting a waveform, changing the decay of the reverb, etc. Many devices are also capable of transmitting changes that are made on the front panel as SysEx messages. These can be recorded in Cubase, and thus incorporated into a regular MIDI recording.

For example: you open up a filter while playing some notes. In that case, you record both the notes and the SysEx messages that are generated when you open the filter. When you play back the recording, the sound changes exactly as it did when you recorded it.

PROCEDURE

1. Select **File > Preferences**.
2. In the **Preferences** dialog, select **MIDI > MIDI Filter** and make sure that **SysEx** is deactivated in the **Record** section.
3. Make sure that the instrument is set to transmit changes of front panel controls as SysEx messages.
4. Record.

AFTER COMPLETING THIS TASK

On the controller lane, check if the events were recorded properly.

MIDI SysEx Editor

SysEx events are shown in the controller lane, their entire content is displayed in the **MIDI SysEx Editor**.

- To open the **MIDI SysEx Editor** for a SysEx event, double-click the SysEx event on the controller lane.
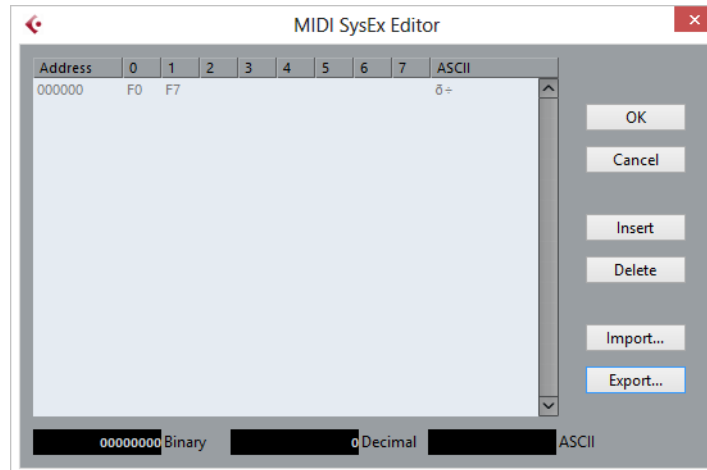
The display shows the entire message on one or several lines. SysEx messages always begin with F0 and end with F7 and a number of arbitrary bytes in between. If the message contains more bytes, so that they do not entirely fit on one line, it continues on the next line. The Address indication to the left helps you find out on which position in the message a certain value is located.

You can edit all values except for the first (F0) and the last ones (F7).

In the **MIDI SysEx Editor**, the bytes are displayed as follows:

- In the main display, values are shown in hexadecimal format.

- To the right of the main display, values are shown in ASCII format.

- At the bottom of the dialog, the selected value is shown in ASCII, binary, and decimal formats.

Adding and Deleting Bytes

- To add a byte, open the **MIDI SysEx Editor** and click **Insert**. The byte is added before the selected byte.

- To delete a byte, open the **MIDI SysEx Editor**, select a byte, and click **Delete**.

- To delete the complete SysEx message, select it in the controller lane and press [Delete] or [Backspace].

Editing Byte Values

You can edit the selected byte value in the main display of the **MIDI SysEx Editor**, or in the ASCII, decimal, and binary displays.

- To edit the selected value, open the **MIDI SysEx Editor**, click on a byte, and type in the value.

Importing and Exporting SysEx Data

You can import SysEx data from disk and export the edited data to a file.

The file has to be in MIDI SysEx (.syx) binary format. Only the first dump in a SYX file will be loaded.

- To import SysEx data, open the **MIDI SysEx Editor** and click **Import**.

- To export SysEx data, open the **MIDI SysEx Editor** and click **Export**.

NOTE

Do not confuse this format with MIDI files, which have the extension .mid.

Chord Functions

The chord functions provide you with many possibilities for working with chords.

The chord functions allow you to:

- Build chord progressions by adding chord events to the chord track.
- Convert chord events to MIDI.
- Use the chord track to control MIDI playback.
- Use the chord track voicing to change the pitches of your MIDI.
- Extract chord events from MIDI data to get an overview of the harmonic structure of a MIDI file.
- Record chord events with a MIDI keyboard.

RELATED LINKS

Chord Track

The chord track allows you to add chord events and scale events.

RELATED LINKS

Adding the Chord Track

PROCEDURE

- Select **Project > Add Track > Chord**.

RESULT

The chord track is added to your project.
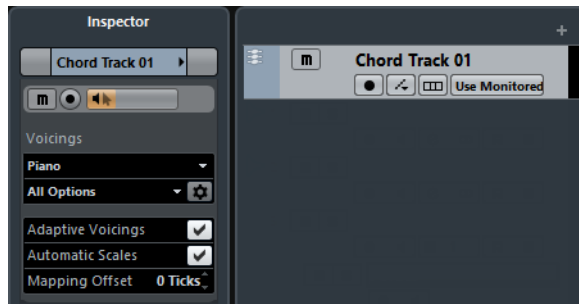
Chord Events

Chord events are representations of chords that control or transpose playback on MIDI and instrument tracks.

Chord events alter the pitches of MIDI notes, if their track is set up to follow the chord track.

Chord events have a specific start position. Their end, however, is determined by the start of the next chord event. They can have a root note, a type, a tension, and a bass note:
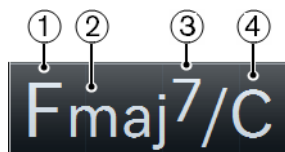
1)   Root note

2)   Type

3)   Tension

4)   Bass note

RELATED LINKS

Chord Editor

The **Chord Editor** allows you to define or change chord events, and to add new chord events.

▪   To open the **Chord Editor**, double-click a chord event.
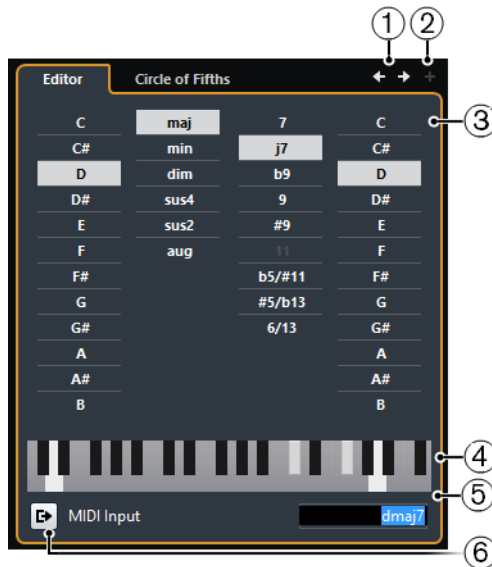
1) **Go to Previous/Next Chord**

   Allow you to select the previous/next chord on the chord track for editing.

2) **Add Chord**

   Adds a new undefined chord event on the chord track.

   NOTE

   This works only if the last chord event on the chord track is selected.

3) **Chord definition buttons**

   Activate these buttons to define a root note, a chord type, a tension, and a bass note for your chord event.

   NOTE

   If you do not select a separate bass note, the setting is linked to the root note, so that no extra bass note is heard.

4) **Keyboard display**

   Shows the notes of the chord event, considering the current voicing settings.

5) **Define Chord by Text Input**

   Allows you to define a chord using the computer keyboard.

6) **Activate MIDI Input**

   Allows you to define a chord by playing a chord on your MIDI keyboard. If the chord is recognized, it is reflected by the chord buttons and the keyboard display.

Adding Chord Events

PREREQUISITE

Add the chord track.

PROCEDURE

1. Select the **Draw** tool and click in the chord track.
    An undefined chord event named X is added.
2. Select the **Object Selection** tool and double-click the chord event.
3. In the **Editor**, select a root note.
4. Optional: Select a chord type, tension, and bass note.
5. Do one of the following:
    ▪   To close the **Editor**, click anywhere outside the **Editor**.
    ▪   To add a new undefined chord event, click **Add Chord**.

RELATED LINKS

Defining Chords By Text Input

In the chord **Editor**, you can use the text input field to define a chord with the computer keyboard.

PROCEDURE

1. Double-click a chord event to open the chord **Editor**.
2. Click in the text input field at the bottom of the **Editor**.
3. Enter a chord by performing the following actions:
    ▪   Define a root note, for example, C, D, E.
    ▪   Define accidentals, for example, # or b.
    ▪   Define the chord type, for example maj, min, dim, sus, or aug.
    ▪   Define a chord extension, for example 7, 9, or 13.

    NOTE

    If you have activated **Solfège** in the **Note Name** pop-up menu (**File > Preferences > Event Display > Chords**), you can also enter chords in this format. You must capitalize the first letter and write "Re" instead of "re", for example. Otherwise, the chord is not recognized.

4. Press [Tab] to add a new chord and define it.

Chord Assistant

The **Chord Assistant** allows you to use a chord as a starting point to get suggestions for the next chord.

▪ To open the **Chord Assistant**, in the **Chord Editor**, click **Circle of Fifths**.
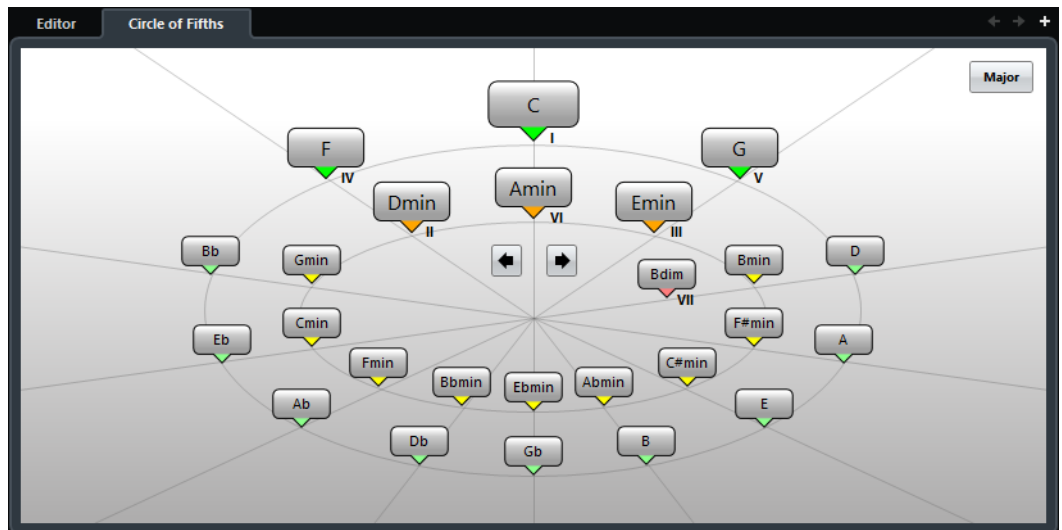
Chord Assistant – Circle of Fifths

The **Circle of Fifths** mode of the **Chord Assistant** shows the chords in an interactive visualization of the circle of fifths.

The origin chord that defines the current key is shown in the center of the **Chord Assistant** and is marked as 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.
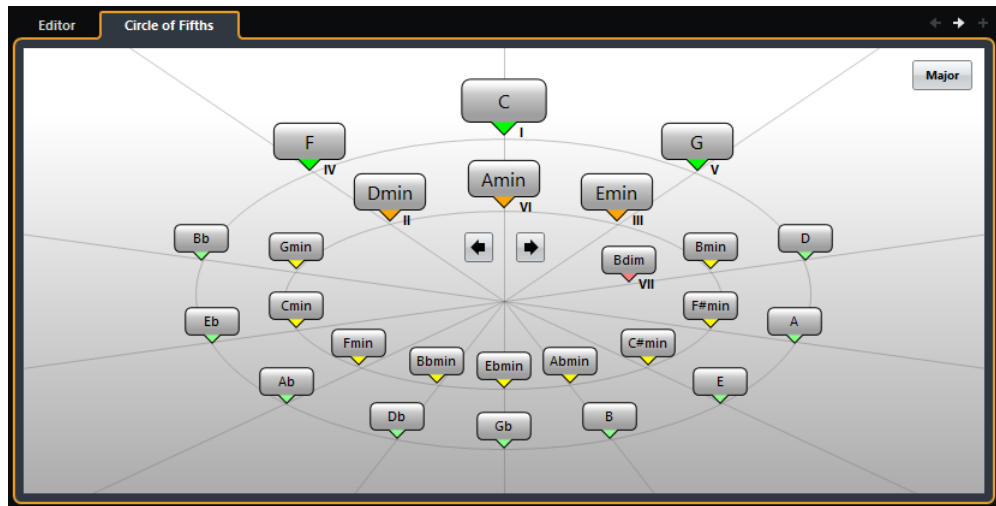
- To play a chord and assign it to the selected chord event, click it.

  The last three chords that you clicked are shown with a highlighted frame.

- To define a new key, right-click the chord in the **Chord Assistant** and select **Use as Origin**, or use the **Rotate Left/Rotate Right** controls.

- To select the parallel minor chord and define it as key, click **Major/Minor**.

Auditioning Chord Events

To hear the chord events on the chord track, you must connect the chord track to the output of an instrument or a MIDI track.

PREREQUISITE

Add the chord track and some chord events.

PROCEDURE

1. Do one of the following:
   - To add an instrument track, select **Project > Add Track > Instrument**.
   - To add a MIDI track, select **Project > Add Track > MIDI.**

2. Assign a VST instrument to your instrument or MIDI track and select a sound.

3. In the chord track **Inspector**, activate **Acoustic Feedback**.

4. From the **Select Track for Auditioning** pop-up menu, select the track that you want to use for auditioning.
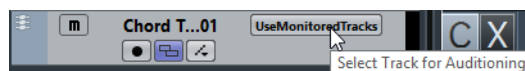
RESULT

The chord events on the chord track now trigger the sound of the assigned instrument on the MIDI or instrument track.

Changing How Chord Events Are Displayed

You can change how chord events are displayed. This is useful, if chord events overlap each other at low zoom levels, or if you do not like the font type.

PROCEDURE

1.   On the chord track, activate **Resolve Display Conflicts**.
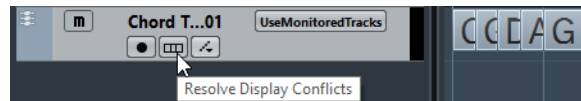
2.   Select **File > Preferences > Event Display > Chords** and set up the chord font.

     Here you can also determine the note name and naming format.

Scale Events

Scale events inform you which chord events fit in a specific sequence of notes that belong to a specific root note.

Cubase automatically creates scale events for your chord events.

▪   To show the scale events, activate **Show Scales** on the chord track.
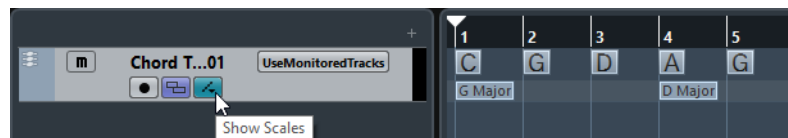
▪   To audition the notes that belong to a scale event, click it.

However, you can also add and edit scale events manually.

Scale events have a specific start position. Their end is determined by the start of the next scale event.

Editing Scale Events

PREREQUISITE

Add the chord track and chord events. Deactivate **Automatic Scales** in the chord track **Inspector**.

PROCEDURE

1.   On the chord track, activate **Show Scales**.

     The scale lane is displayed.

2.   Select the chord event.

     A scale event is shown on the scale lane.

3.   Do one of the following:

- Click the first scale event on the chord track, and on the info line, select a **Root Key** and **Type**.
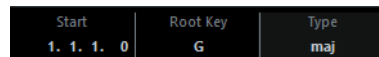
- Double-click the scale event, and in the keyboard that appears, select a **Root Key** and **Type** of the scale.
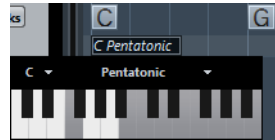
The keys that correspond to the scale are highlighted.

Voicings

Voicings determine how chord events are set up. They define the vertical spacing and order of the pitches in a chord, but also the instrumentation and genre of a musical piece.

For example, a C chord can be spread over a wide range of pitches, and a pianist will choose different notes than a guitarist. The pianist may also play completely different pitches for different musical genres.

- You can set up voicing for the entire chord track in the chord track **Inspector**.

- You can set up voicings for individual chord events on the **Voicing** pop-up menu on the info line.

NOTE

If **Adaptive Voicings** is activated in the chord track **Inspector**, you can only change the voicings for the first chord event on the info line.

Setting up Voicings

To set up voicings for the entire chord track, you can use the chord track **Inspector**.
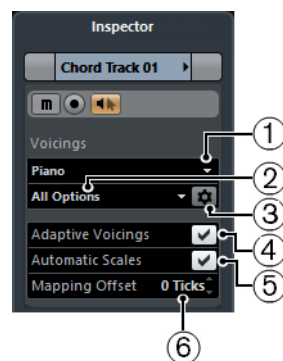
1) **Voicing library**

Allows you to select **Guitar**, **Piano**, or **Basic** as a voicing library.

2) **Voicing library subset**

NOTE

This is only available, if **Guitar** or **Piano** is set as voicing library.

Allows you to select a preset voicing library subset.

3) **Configure voicing parameters**

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

4) **Adaptive Voicings**

Activate this to let Cubase set the voicings automatically. This prevents the individual voices from jumping too much.

5) **Automatic Scales**

Activate this to let Cubase set the scales automatically.

6) **Mapping Offset**

If you enter a negative number of ticks, the chord events will affect the MIDI notes that have been triggered too early.

Configure Voicing Parameters

If you click **Configure Voicing Parameters** in the **Voicings** section of the **Inspector**, you can configure your own voicing parameters for a specific voicing scheme.

NOTE

The **Start Voicing** section for piano, guitar, and basic voicings lets you select a start voicing. This is only available for MIDI and instrument tracks, but not for the chord track, and only if you select **Voicings** in the **Follow Chord Track** pop-up menu.

In the **Style** section for **Piano** voicings, you can set up the following parameters:

Triads

Sets a triad. Chords with more than three notes are not changed.

Triads with maj9

Sets a triad with a major ninth, but without root note. Chords with more than three 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 three notes are not changed.

4-note chords

Sets a default 4-note chord without root note. Chords with less than three notes are not changed.

4-note chords (Open Jazz)

Sets a 4-note chord without root note and without fifth. Chords with less than three notes are not changed.

5-note chords

Sets a 5-note chord with a ninth. Chords with less than four notes are not changed.

In the **Options** section for **Piano** voicings, you can set up the following parameters:

Add Root Note

Adds a root note.

Duplicate Root

Duplicates the root note.

Fatten up

Duplicates the tenor.

In the **Voicing Range** section for **Piano** voicings, you can set up the following parameters:

Lowest Root Note

Sets the limit for the lowest root note.

Lowest Note

Sets the limit for the lowest note, except the root note.

Highest Note

Sets the limit for the highest note, except the root note.

In the **Style** section for **Guitar** voicings, you can set up the following parameters:

Triads

Sets a triad with four, five or six voices.

4-Note Chords

Sets a 4-note chord with four, five or six voices without tensions.

3-String Triads

Sets a three string triad.

Modern Jazz

Sets 4-note, 5-note, and 6-note chords, partly without root note, but with tensions.

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For **Basic** voicings only **Octave Offset from C3** is available. This allows you to determine an offset value for the default octave range.

Converting Chord Events to MIDI

You can convert chord events to MIDI for further editing or for printing a lead sheet in the **Score Editor**.

PROCEDURE

1. Add an instrument track or a MIDI track.
   - To add an instrument track, select **Project > Add Track > Instrument**.
   - To add a MIDI track, select **Project > Add Track > MIDI.**

2. Do one of the following:
   - To convert all chord events to MIDI, select **Project > Chord Track > Chords to MIDI.**
   - To convert only selected chords to MIDI, select the chord events and drag them to the MIDI or instrument track.

RESULT

A new MIDI part is created, containing the chords as MIDI events.

Controlling MIDI Playback using the Chord Track

You can use the chord track to control MIDI playback.

Using Live Transform

Live Transform allows you to transpose the MIDI input live to a chord progression on the chord track. This way, you do not have to worry about what key you hit on your MIDI keyboard as the MIDI input is transposed to match chords or scales on your chord track in realtime.

PROCEDURE

1. Create a MIDI or an instrument track and activate **Record Enable**.

2. In the **Inspector**, open the **Chords** section.

3. Open the **Live Transform** pop-up menu and do one of the following:
   - To map the MIDI input to chord events, select **Chords**.

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▪ To map the MIDI input to scale events, select **Scales**.

4. Hit some keys on your MIDI keyboard or on the **Virtual Keyboard**.

RESULT

Any key that you hit is mapped in realtime to the chord or scale events on the chord track.

Using Follow Chord Track

This allows you to match an existing recording to a chord progression on the chord track.

PROCEDURE

1. Select the track that you want to match to the chord track.
2. In the **Inspector**, click **Chords**.
3. Open the **Follow Chord Track** pop-up menu and select a mode.

   NOTE

   If this is the first time that you open this pop-up menu for the track, the **Follow Chord Track** dialog opens.

4. In the **Follow Chord Track** dialog, make your settings.
5. Click **OK**.

RESULT

The events on your track now match the chord progression on the chord track.

NOTE

If you matched your MIDI track to the chord track, some of the original MIDI notes may be muted. To hide these notes in the editors, select **File > Preferences > Editing > Chords** and activate **Hide muted Notes in Editors**.

RELATED LINKS

Follow Chord Track Modes

This section of the **Inspector** allows you to determine how your track follows the chord track.
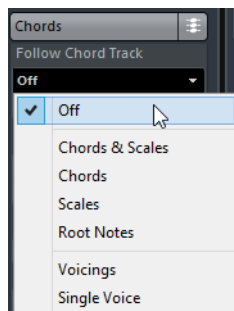
The following options are available on the **Follow Chord Track** pop-up menu:

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 to the notes of a single voice (soprano, tenor, bass, etc.) of the voicing. Use the pop-up menu below to select the desired voice.
>
> NOTE
>
> If you apply this mode to a selection of tracks that contain separate voices, you can set up one track as master and the others as voicing slaves. This way, you can change the voicing of the master, and the slaves will follow automatically.

RELATED LINKS

Follow Chord Track Dialog

This dialog opens the first time that you select an option on from the **Follow Chord Track** pop-up menu on the **Chords** section of the **Inspector**.
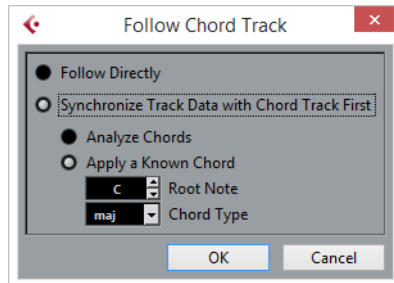
Follow Directly

Activate this if your MIDI notes are already in accordance with the chord track. This is the case if you extracted your chords from the MIDI events on the track by selecting **Project > Chord Track > Create Chord Symbols**, for example.

Synchronize Track Data with Chord Track First

Activate **Analyze Chords** if the track data has nothing in common with the chord events. This analyzes the MIDI events and matches the found chords to the chord track. This is only available for MIDI.

Activate **Apply a Known Chord** if the track data has nothing in common with the chord events and if there are no chord changes. Specify **Root Note** and **Chord Type** of your events.

Using Map to Chord Track

This allows you to match individual parts or events to a chord progression on the chord track.

PROCEDURE

1. In the **Project** window, select the events or parts that you want to map to the chord track.
2. Select **Project > Chord Track > Map to Chord Track**.
   The **Map to Chord Track** dialog opens.
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**.

R ESULT

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**.

R ELATED LINKS

Assigning Voices to Notes

You can transpose MIDI notes to match the voices of a selected voicing library.

P ROCEDURE

▪ Select **Project > Chord Track > Assign Voices to Notes**.

R ESULT

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** in the info line is assigned.
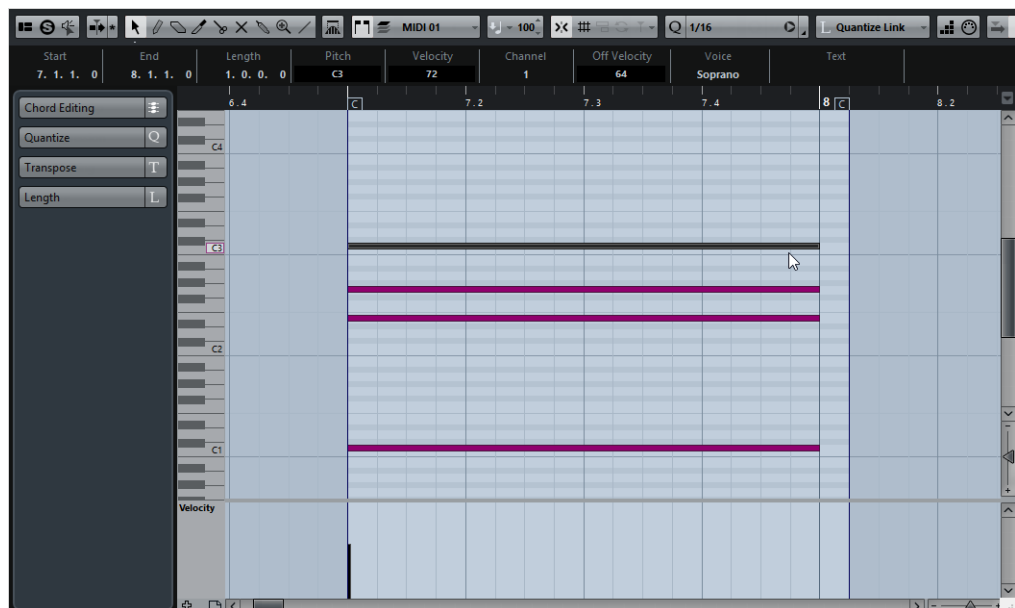
Extracting Chord Events from MIDI

You can extract chords from MIDI notes, parts, or tracks. This is useful, if you have a MIDI file and want to show its harmonic structure, and use this file as starting point for further experimenting.

PREREQUISITE

Add the chord track and create MIDI notes that can be interpreted as chords. Drums, monophonic bass, or lead tracks are not suitable.

PROCEDURE

1. In the **Project** window, select a part or one or several MIDI tracks.
    You can also select the MIDI tracks, parts, or notes that you want to extract in the **Key Editor**, **Score Editor**, or **In-Place Editor**.

2. Select **Project > Chord Track > Create Chord Symbols**.
    The **Create Chord Symbols** dialog opens.

3. Make your settings and click **OK**.

RESULT

The chord events are added on the chord track.

RELATED LINKS

Create Chord Symbols Dialog on page 520

Create Chord Symbols Dialog

This dialog allows you to determine, which MIDI data should be taken into account when extracting chord events from MIDI.
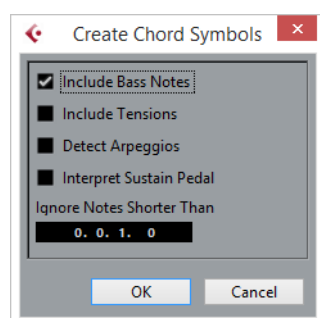
Include Bass Notes

Activate this, if you want your chord events to contain a bass note.

Include Tensions

Activate this, if you want your chord events to contain tensions.

Detect Arpeggios

Activate this, if you want your chord events to contain arpeggiated chords, that is, chords whose notes are played one after another instead of all at once.

Interpret Sustain Pedal

Activate this, if you want your chord events to contain sustain pedal chords, that is, notes that are played while the sustain pedal is held.

Ignore Notes Shorter Than

Allows you to determine the minimum length of the MIDI events that are taken into account.

Recording Chord Events with a MIDI Keyboard

You can use a MIDI keyboard to record chord events on the chord track.

PREREQUISITE

Your project contains an instrument track with **Record Enable** or **Monitor** activated.

PROCEDURE

1. On the chord track, activate **Record Enable**.
2. On the **Transport Panel**, activate **Record**.
3. Play some chords on your MIDI keyboard.

RESULT

All recognized chords are recorded as chord events on the chord track.

NOTE

The chord track uses its own voicing settings. The recorded chord events may therefore sound different.

RELATED LINKS

Chord Pads

Chord pads allow you to play with chords, and to change their voicings and tensions. In terms of harmonies and rhythms, they allow for a more playful and spontaneous approach to composition than the chord track functions.

You can:

- Perform with chords in realtime via a MIDI keyboard.

- Record your performance as MIDI events on a MIDI or instrument track or even on the chord track.

Chord Pads Zone

The chord pads zone at the bottom of the **Project** window holds all functions that you need to work with chord pads.

To open the chord pads zone do one of the following:

- Select **Project > Chord Pads**

- Select a MIDI or instrument track, and in the Inspector, open the **Chords** section and activate **Show/Hide Chord Pads Zone**.
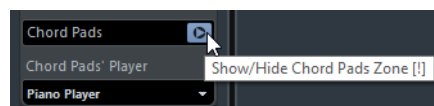
The chord pads zone holds the following controls:
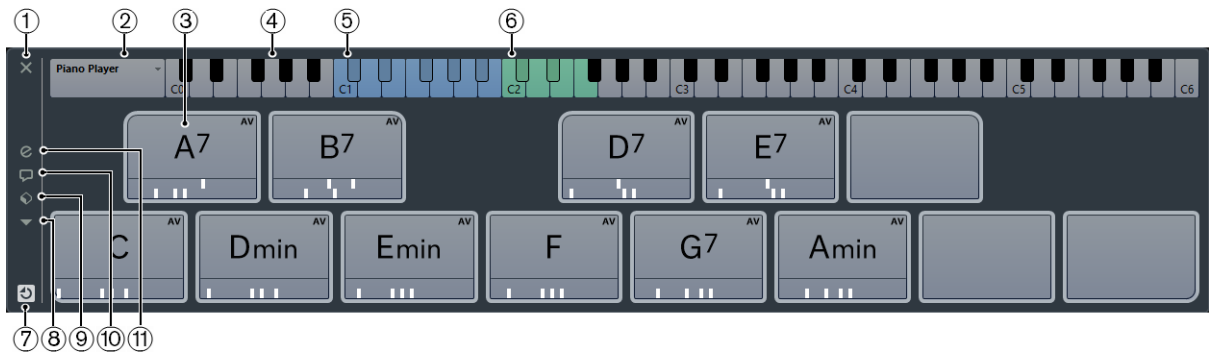
1) **Close Chord Pads Zone**

   Closes the chord pads zone.

2) **Current Player**

   Shows the current player and opens a menu where you can select another player.

3) **Chord Pad**

   Each chord pad can contain a chord symbol. To change it, click the **Open Editor** control on the left edge of the chord pad.

4) **Keyboard**

   Shows which keys are played when you trigger a chord pad. To zoom the keyboard, click a key and drag up or down. To scroll the keyboard, click and drag to the left or to the right.

5) **Trigger Keys**

   The keys highlighted in blue on the keyboard correspond to the keys on your MIDI keyboard that trigger the chord pads. You can define the trigger keys on the **Remote Control** page of the chord pad **Settings**.

6) **Remote Range for Voicings/Tensions/Transpose**

   The keys highlighted in green on the keyboard display correspond to the keys on your MIDI keyboard that change the voicings, tensions, and transpose settings of the pads. You can define these remote keys on the **Remote Control** page of the chord pad **Settings**.

7) **Activate/Deactivate Remote Control for Chord Pads**

   Allows you to activate/deactivate the chord pads zone. If you deactivate remote control for chord pads, your MIDI keyboard no longer triggers the pads.

8) **Functions Menu**

   Opens a menu with specific functions and settings for the chord pads.

9) **Chord Pads Presets**

   Allows you to save and load presets for chord pads and players.

10) **Show/Hide Chord Assistant**

Shows/Hides the **Chord Assistant** that shows suggestions of chords that match the chord that you specified as the origin chord.

11) **Show/Hide Settings**

Shows/Hides the chord settings, where you can configure different players, the pad layout, and the remote assignment.

RELATED LINKS

Chord Pad Controls

The chord pad controls allow you to edit the chord pads.

▪ To show the chord pad controls, move the mouse over a chord pad.
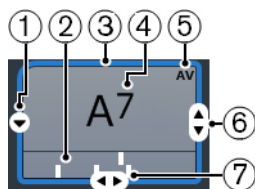
1) **Voicing Indicators**

Shows the voicing used for the chord. Voicing indicators can only be displayed, if the horizontal zoom level for the chord pads is high enough.

2) **Open Editor**

Opens the chord **Editor** that allows you to select a chord for the chord pad.

3) **Adaptive Voicing Reference/Use X as Origin for Chord Assistant**

When the active chord pad is set as adaptive voicing reference, its borders are shown in light green. All other chord pads will follow its voicing and are set in a way that they do not get to far away from the reference.

If the chord pad is set as origin for the **Chord Assistant**, its borders are shown in green. This chord pad is used as a basis for the suggestions in the **Chord Assistant** window.

4) **Assigned Chord**

Shows the chord symbol that is assigned to the chord pad. Each chord pad can contain one chord symbol. If the name of the assigned chord is too long to display it on the chord pad, it is underlined, and the full chord name is shown in a tooltip.

5) **AV (Adaptive Voicing)/L (Lock)**

By default, all chord pads follow the adaptive voicing. This is indicated by an AV symbol. If you change the voicing for a pad manually however, **Adaptive Voicing** is deactivated.

An L symbol indicates that the chord pad is locked for editing.

6) **Voicing**

Allows you to set another voicing for the chord pad.

7) **Tensions**

Allows you to add/remove tensions for the chord.

Chord Pad Context Menu

▪   **Use X as Origin for Chord Assistant**

Sets the chord of the current pad as an origin chord for the **Chord Assistant**.

▪   **Assign Pad from MIDI Input**

Allows you to assign a chord by pressing keys on your MIDI keyboard.

▪   **Lock**

Allows you to lock a chord pad for editing.

▪   **Adaptive Voicing**

Sets the current pad as adaptive voicing reference. If set, the automatic voicings for the following pads will be set in a way that they do not get too far away from the reference voicing. Only one pad can be set as adaptive voicing reference.

▪   **Adaptive Voicings Reference**

Resets the adaptive voicing reference.

▪   **Unassign Pad**

Removes the chord assignment from the current pad.

Functions Menu
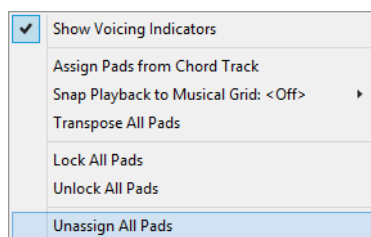
▪   **Show Voicing Indicators**

Allows you to activate/deactivate the voicing indicators that can be displayed at the bottom of each chord pad.

- **Assign Pads from Chord Track**

  Assigns the chord events from the chord track to the chord pads in the same order as they appear on the chord track. Chord events that have more than one occurrence are only assigned once.

- **Snap Playback to Musical Grid**

  Allows you to delay the playback of a triggered chord pad to the next defined musical position. This is useful, if you work with an arpeggiator or with the Pattern Player.

- **Transpose All Pads**

  Transposes all chord pads by a defined transpose value.

- **Lock All Pads**

  Locks all chord pads for editing.

- **Unlock All Pads**

  Unlocks all chord pads.

- **Unassign All Pads**

  Removes the chord assignment from all pads.

Preparations

Before you can start working with the chord pads, you must add a MIDI or an instrument track with an instrument loaded, and open the chord pads zone.

PREREQUISITE

You have installed and set up a MIDI keyboard.

PROCEDURE

1. Select **Project > Add Track > Instrument**.
2. In the **Add Instrument Track** dialog, select an instrument, and click **Add Track**.

   An instrument track with the selected instrument loaded is added to your project, and select a sound that is suited for chords.
3. On the instrument track, click **Record Enable**.
4. Select **Project > Chord Pads** to open the **Chord Pads Zone** at the bottom of the **Project** window.

RESULT

You can now click the chord pads or press some of the assigned keys on your MIDI keyboard to trigger the preassigned chords.

Chord Assistant

The **Chord Assistant** allows you to use a chord as a starting point for suggestions for the next chord. It assists you in finding the right chords for creating a chord progression for your song.

- Click **Show/Hide Chord Assistant** on the left side of the chord pads area to open the **Chord Assistant**.
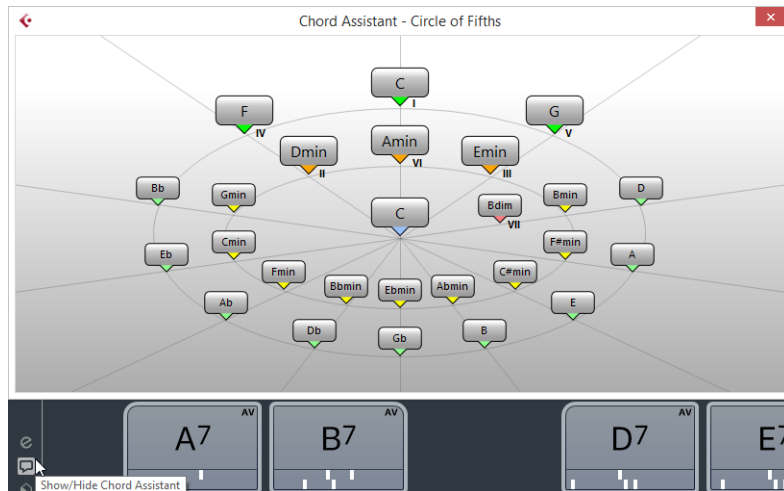
You must define an origin chord as follows:

- Right-click the chord pad with the chord you want to use as origin and select **Use X as Origin for Chord Assistant**.

The **Chord Assistant** shows suggestions for follow-on chords that you can assign to the chord pads.

Chord Assistant – Circle of Fifths Mode

The **Chord Assistant** shows the chords in an interactive visualization of the circle of fifths.

The origin chord that defines the current key is shown in the center of the **Chord Assistant**. The tonic (I) of that key is displayed above the center. The outer circle shows the twelve major chords ordered in intervals of fifths.

The inner circle displays the corresponding parallel minor chords.

The roman numerals mark the chords of the current key with their scale degree. You can use these chords to create typical chord progressions. However, you can also use the other chords for more creative results.
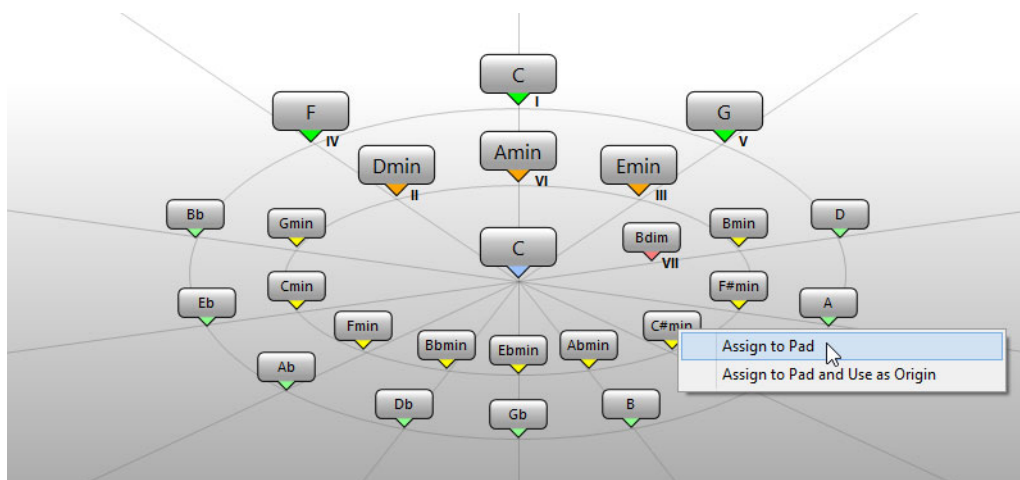
- To play a chord, click it.

  The last three chords that you clicked are shown with a highlighted frame.

- To assign a chord to the next unassigned chord pad, right-click the suggested chord and select **Assign to Pad**.

  You can also drag the suggested chord and drop it on a chord pad.

- To assign a suggestion to the next unassigned chord pad and use this chord as origin, right-click the chord and select **Assign to Pad and Use as Origin**.

NOTE

The **Circle of Fifths** is also available in the **Chord Assistant** for the chord track.

Assigning Chords to Chord Pads

Some chords are preassigned to the chord pads. But you can also assign your own chords.

To assign chords to chord pads, you can use:

- The chord **Editor**
- The **Chord Assistant** – Circle of Fifths
- Your MIDI keyboard
- The chord events from the chord track

You can overwrite the preassigned chords, or clear all chord pads first to start from scratch. Proceed as follows:

- To the left of the chord pads zone, open the **Functions Menu** and select **Unassign All Pads**.

Assigning Chords with the Chord Editor

If you know exactly which chord you want to assign to a specific chord pad, you can use the chord **Editor**.

PROCEDURE

1. Move the mouse pointer to the left edge of the chord pad, and click **Open Editor**.

2. In the chord **Editor**, use the chord definition buttons to define a root note, a chord type, a tension, and a bass note.

    The new chord is triggered automatically to give an acoustic feedback.

RELATED LINKS

Assigning Chords with the Chord Assistant – Circle of Fifths Mode

If you have a chord that you want to use as a starting point for a chord progression, but you do not know how to create such a progression, you can use the **Chord Assistant** – Circle of Fifths.

PROCEDURE

1. Right-click the chord pad that you want to use as a starting point and activate **Use x as Origin for Chord Assistant**.
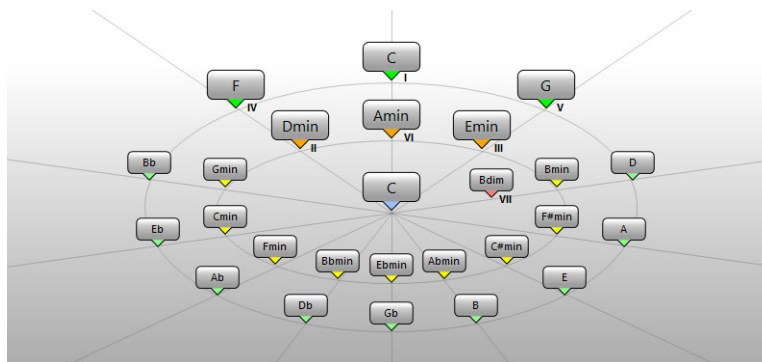
    The **Chord Assistant** opens, and the borders of the chord pad change their color to indicate that the assigned chord is now used as origin.

    The origin chord is displayed in the center, and the chords that belong to the scale are shown above it. The numerals indicate the scale degree of the chords. These help you to create chord progressions.

2. In the **Chord Assistant**, click the chord symbols to trigger the corresponding chords.

3. To assign a chord, drag it from the **Chord Assistant** and drop it on the chord pad.

    NOTE

    If one of the next chord pads is free, you can also right-click the chord in the **Chord Assistant** and select **Assign to Pad**. This assigns the chord to the next free pad.

Assigning Chords with the MIDI Keyboard

If you know which chord you want to assign to a specific chord pad, you can use a MIDI keyboard.

PREREQUISITE

You have selected a MIDI track or an instrument track.

PROCEDURE

1. Right-click the chord pad that you want to use for the new chord, and select **Assign Pad from MIDI Input**.

    The borders of the chord pad change their color to indicate that it is now ready for recording.

2. On your MIDI keyboard, press the keys for the chord that you want to assign.

    The chord and its voicing is assigned to the chord pad, and you hear an acoustic feedback of the chord.

    NOTE

    The assigned voicing can be changed by the **Adaptive Voicing** setting. Therefore, if you want to keep the voicing for that specific pad, right-click the chord pad and select **Lock** from the context menu.

RELATED LINKS
Adaptive Voicing on page 537

Assigning Chords from the Chord Track

You can assign the chord events from the chord track to the chord pads.

PROCEDURE

▪ To the left of the chord pads zone click the **Functions Menu** button, and select **Assign Pads from Chord Track**.

    If chords are already assigned to the chord pads, a warning message informs you that all previous assignments will be overwritten.

RESULT

The chord events are assigned to the chord pads in the same order as they appear on the chord track.

NOTE

Chord events that have more than one occurrence on the chord track are only assigned once.

Moving and Copying Chord Pads

You can swap the chord assignments between 2 pads or copy a specific chord and its settings from one pad to another.

- To swap the chord pad assignment between 2 pads, click a chord pad and drag it to another chord pad.

  While you drag, the border of the destination chord pad changes its color. When you drop the pad on another, the chord assignments are swapped.

- To copy the chord assignment of one chord pad to another pad, [Alt]/[Option]-click a chord pad and drag it to another chord pad.

  While you drag, the border of the destination chord pad changes its color. When you drop the pad on another, the first pad's assignment is copied to the destination chord pad.

NOTE

When you move or copy chord pads, the chord is moved or copied, and all its settings are, except for the **Adaptive Voicings Reference**.

Playing Back and Recording Chords

Playing Back Chord Pads with your MIDI Keyboard

PREREQUISITE

You have connected and set up a MIDI keyboard.

PROCEDURE

1. Select **Project > Add Track > Instrument**.
2. In the **Add Instrument Track** dialog, select a VST instrument.
3. Click **Add Track**.
   An instrument track with the selected VST instrument is added to your project.
4. On the instrument track, click **Record Enable**.
5. Select **Project > Chord Pads** to open the **Chord Pads Zone** at the bottom of the **Project** window.
6. Press some keys on your MIDI keyboard to trigger the chords that are preassigned to the chord pads.

RELATED LINKS

Recording Chords on MIDI or Instrument Tracks

You can record the chords that are triggered through the chord pads on MIDI or instrument tracks. This way, you can play back and edit your performance at any time.

PREREQUISITE

You have connected and set up a MIDI keyboard, you have opened and set up the chord pads zone, and you have added an instrument or a MIDI track for which a VST instrument is loaded to your project.

PROCEDURE

1.   On the instrument track, click **Record Enable**.

2.   On the **Transport** panel, activate **Record**.

3.   On your MIDI keyboard, press the keys that trigger the chord pads.

     NOTE

     Use the keys that are not assigned to play and record other chords.

RESULT

The triggered chords are recorded on the track. The note events are automatically assigned to different MIDI channels according to their pitches. Note events that correspond to the soprano voice are assigned to MIDI channel 1, alto is assigned to MIDI channel 2, and so on.

AFTER COMPLETING THIS TASK

You can now open the **Key Editor** and fine-tune your recorded MIDI parts using the chord editing functions, for example. You can also use **MIDI > Dissolve Part** to dissolve the recorded chords by pitches/channels.

Recording Chords on the Chord Track

You can record the triggered chords on the chord track. This way, you can easily create chord events for a lead sheet, for example.

PREREQUISITE

You have connected and set up a MIDI keyboard, you have opened and set up the chord pads zone, and you have added an instrument or a MIDI track for which a VST instrument is loaded.

PROCEDURE

1.   On the instrument track, enable **Monitor**.

2.   Select **Project > Add Track > Chord** to add the chord track.

3.   In the Inspector for the chord track, click **Record Enable**.

4.   On the **Transport** panel, activate **Record**.

5. On your MIDI keyboard, press the keys that trigger the chord pads.

> NOTE
>
> Use the keys that are not assigned to play and record other chords.

RESULT

The chord events are recorded on the chord track.

> NOTE
>
> The recorded chord events may sound different from the chord pad playback. This
> is because the voicing settings for the chord track differ from the chord pad
> voicings.

RELATED LINKS

Chord Pad Settings – Remote Control

On the **Remote Control** tab in the chord pad **Settings**, you can change the default
remote control assignments.

- To the left of the chord pads zone, click **Show/Hide Settings** and activate
  the **Remote Control** tab.
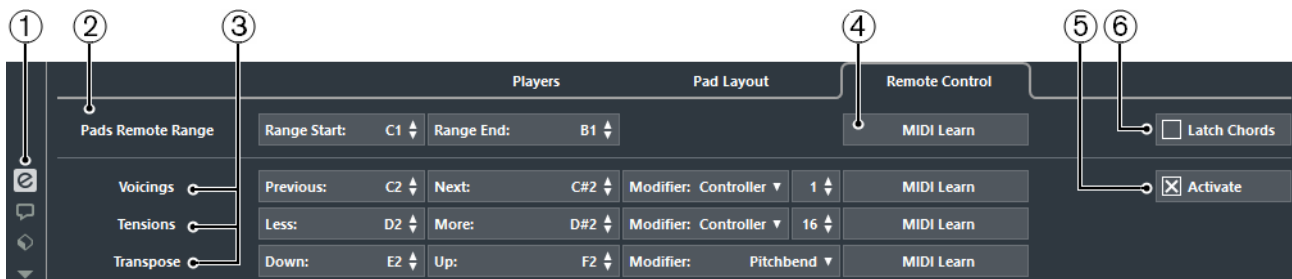
1) **Show/Hide Settings**

Opens the settings for the chord pads.

2) **Pads Remote Range**

Allows you to set the start and end note for the remote range.

3) **Voicings/Tension/Transpose**

Allows you to assign remote keys for changing the voicings, tension, and
transposition settings of the last played chord pad. You can also assign
continuous controllers to change all chord pads simultaneously.

4) **MIDI Learn**

Activates/Deactivates the **MIDI Learn** function to assign MIDI input to the **Pads Remote Range** and to the parameters **Voicings**, **Tensions**, and **Transpose**.

5) **Activate**

Activates/Deactivates the remote key assignment for the parameters **Voicings**, **Tensions**, and **Transpose**. If this is deactivated, only the remote key assignment for the **Pads Remote Range** is active.

6) **Latch Chords**

Activate this if you want the chord pad to play back until it is triggered again.

NOTE

If you use MIDI controllers that are already assigned to other remote control features, for example, the VST Quick Controls, all previous assignments are lost.

RELATED LINKS
Pads Remote Range on page 534

Pads Remote Range

The **Pads Remote Range** is the range of remote keys that trigger the chords that are assigned to the chord pads.
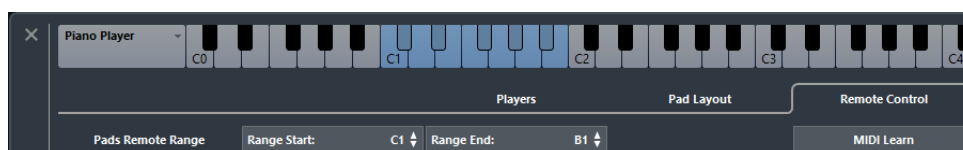
By default, the **Range Start** is set to C1 and the **Range End** to B1. This is indicated by the corresponding keys on the keyboard in the chord pads zone being highlighted. You can trigger the chords that are assigned to the chord pads by hitting the keys that correspond to this note range on your MIDI keyboard.

Default Remote Assignment

By default, the MIDI events C1 to B1 trigger the chords that are assigned to the chord pads. All keys that are not assigned for remote control, by default G#2 and further, can be used for regular playback.

You can change the voicing, tension or transposition of the triggered chord by enabling **Activate** in the lower part of the **Remote Control** tab and using the following default remote notes:

Action	Description	Remote Note
Voicings: Previous	Plays back the previous voicing of the last played chord.	C2

Action	Description	Remote Note
Voicings: Next	Plays back the next voicing of the last played chord.	C#2
Voicings for all chord pads	The wheel position determines the voicings for the next played chords of all chord pads.	CC#1 Modulation wheel
Tensions: Fewer	Plays back the last played chord with fewer tensions.	D2
Tensions: More	Plays back the last played chord with more tensions.	D#2
Tensions for all chord pads	Allows you to determine the tension level for the next played chord of all chord pads.	CC#16
Transpose: Down	Plays back the last played chord and transposes it downwards.	E2
Transpose: Up	Plays back the last played chord and transposes it upwards.	F2
Transpose all chord pads	The wheel position determines the transposition value for the next played chords of all chord pads. Moving the wheel all the way up or all the way down corresponds to +/-5 semitones.	Pitchbend wheel

Remote Assignments are saved globally.

NOTE

If you use the remote keys for voicings, tensions, or transposition after releasing the remote key for the chord pad, the next played chord is affected.

Changing the Pads Remote Range

You can widen the pads remote range to access more chord pads. If you want to use a wider key range on your MIDI keyboard for regular playing, you can narrow the pads remote range.

PROCEDURE

1. Select **Show/Hide Settings > Remote Control** to open the remote control assignments.
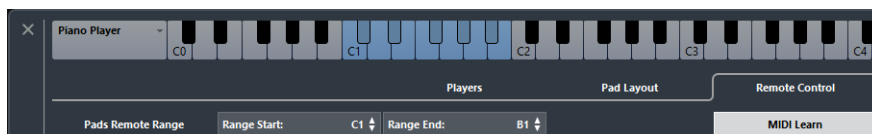
2. Do one of the following:
    ▪ Click **MIDI Learn** so that the button lights up, and on your MIDI keyboard, press the two keys that you want to assign as range start and range end.
    ▪ Enter a new value in the **Range Start** and **Range End** fields.

RESULT

On the keyboard, the indication for pads remote range is changed.

Chord Pad Settings – Players

On the **Players** tab in the chord pad **Settings** you can change the voicing that is used for the chord pads. You can select different players with specific voicing settings that are typical for that kind of player. By default, the **Piano Player** option is active.

▪ To the left of the chord pads zone, click **Show/Hide Settings** and activate the **Players** tab.
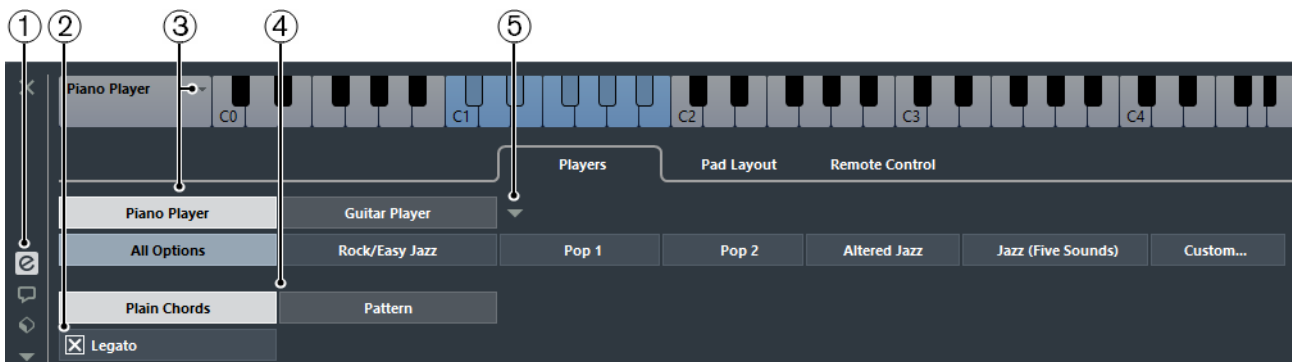
1) **Show/Hide Settings**

Opens the settings for the chord pads.

2) **Legato**

If this is activated, the common notes of two subsequent chords are connected.

3) **Player Selection**

Selects the player, and uses its voicing for the chord pads.

4) **Plain Chords/Pattern**

Select **Plain Chords** to trigger all notes of a chord simultaneously, or select **Pattern** to break up the chords into their individual notes.

In **Plain Chords** mode, you can activate **Legato** to hold the common notes of two subsequent chords instead of triggering them again.

536

5) **Add Player**

Opens a menu where you can select the player that you want to add. From here, you can also rename or remove the current player.

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. In the chord pads zone, these voicings are referred to as players.

Adaptive Voicing

In Cubase, the **Adaptive Voicing** setting ensures that pitches in chord progressions do not change abruptly.

By default, **Adaptive Voicing** is activated and the voicings of the chord pads are determined automatically according to specific voice leading rules.

If you want to set the voicing of a specific chord pad manually, and do not to want it changed automatically, you can use the **Voicing** control to the right of a chord pad. When you assign your own voicing, **Adaptive Voicing** is deactivated for that chord pad, so that the pad does no longer follow the voice leading rules of the voicing reference. To activate **Adaptive Voicing** again, right-click the chord pad and activate **Adaptive Voicing**.

To lock the voicing for a chord pad, you can right-click the pad and activate **Lock**. This locks this pad for editing and remote control changes, and deactivates **Adaptive Voicing**. To unlock the chord pad again, right-click the pad and deactivate **Lock**.

Using the Pattern Player

You can determine how the triggered chord is played: as a plain chord, or according to a selected pattern. The pattern player plays the notes that make up the chord one after another (arpeggio).

PROCEDURE

1. Select **Show/Hide Settings > Players > Pattern**.

Plain Chords			Pattern		
No Preset	▼	+ ×	Import MIDI Loop	Drop MIDI Part	Velocity from: Pattern ▼
					✓ **Pattern**
					MIDI Keyboard
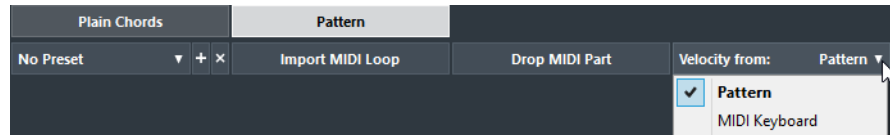
2. Perform one of the following actions:
    ▪ Click **Import MIDI Loop** to select a MIDI loop that you want to use as a pattern.
    ▪ Drag a MIDI part from the event display to the **Drop MIDI Part field**.

    NOTE

    The loop or part must have between 3 and 5 voices. In the **MediaBay**, the number of voices is indicated in the **Voices** column of the result list.

    The loop or part is taken as a reference and defines how the chord is played. The **Drop MIDI Part** field displays the name of the selected loop or part.

3. In the **Velocity from:** field, select a velocity source for the notes.
    ▪ Activate **MIDI Keyboard** to determine the velocity values by pressing the keys on your MIDI keyboard harder or softer.
    ▪ Activate **Pattern** to use the velocity values from the MIDI loop or the MIDI part that is selected as a pattern.

AFTER COMPLETING THIS TASK

If you have a pattern that you want to use in other projects, you can save it using the presets section in the pattern player.

RELATED LINKS

Using Different Players on Multiple Tracks

You can set up different players with different sounds on different tracks. If you record-enable these tracks and play the chord pads, each track uses a dedicated player.

PROCEDURE

1. Select **Project > Add Track > Instrument**.

2. In the **Add Instrument Track** dialog, enter the number of tracks in the **Count** field, and select a VST instrument.

3. Click **Add Track**.

   The instrument tracks are added to your project.

4. Select **Project > Chord Pads** to open the chord pads zone.

5. To the left of the chord pads zone, activate **Show/Hide Settings** and click **Players**.
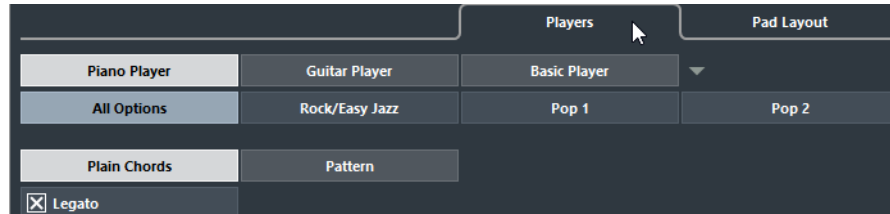
6. Select the first instrument track, select a sound on the VST instrument, and in the chord pads zone, select a player.

   For example, select a piano sound and assign a **Piano Player**.

   NOTE

   When setting up the player for a track, make sure that Record Enable or Monitor is only active for this particular track.

7. Select the second instrument track, select a sound on the VST instrument, and set up another player.

   For example, select a guitar sound and assign a **Guitar Player**.

8. Select the next instrument track, and proceed as for the other 2 tracks.

   For example, select a string sound and assign a **Basic Player**.

9. Select all instrument tracks, and click **Record Enable**.

RESULT

You can now play the chord pads and use the remote control parameters for **Tensions** and **Transpose** to change all chord symbols for each player simultaneously. However, if you change the **Voicing**, only the selected player is affected.

Chord Pad Settings – Pad Layout

The **Pad Layout** tab in the chord pad **Settings** allows you to change the layout that is used for the chord pads. By default, the keyboard layout is active, but you can change to a grid layout, if you prefer that. After changing the pad layout you may need to adjust the remote setup.

▪ To the left of the chord pads zone, click **Show/Hide Settings** and activate the **Pad Layout** tab.
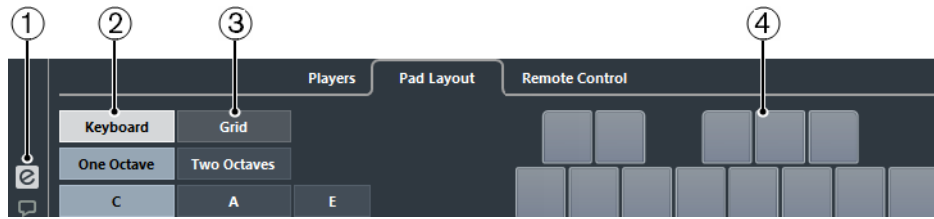
1) **Show/Hide Settings**

Opens the settings for the chord pads.

2) **Keyboard**

Activate this to show the chord pads in a keyboard layout. You can display one or two octaves, and you can select if the first chord pad starts with C, A or E.

3) **Grid**

Activate this to show the chord pads in a grid layout. You can display up to 4 rows and 16 columns.

4) **Layout display**

Shows how the active chord pad layout is displayed.

Chord Pads Presets

Chord pads presets are templates that can be applied to newly created or to existing chord pads.

Chord pads presets contain the chords that are assigned to the chord pads, as well as the player configurations including any pattern data that you have imported via the **MediaBay** or by using drag & drop. The chord pads presets allow you to quickly load chords, or reuse player settings. The **Chord Pads Presets** menu is located to the left of the chord pads zone. Chord pads presets are organized in the **MediaBay**, and you can categorize them with attributes.

▪ To save/load a chord pads preset, select **Chord Pads Presets > Save/Load Chord Pads Preset.**

You can also load only the assigned chords from a chord pads preset, without loading the player configurations. This is useful if you want to use specific chords that you have saved as a preset, but do not want to alter your current player setting.

▪ To load only the chords of a chord pads preset, select **Chord Pads Presets > Load Chords from Preset.**

In the same way, you can also load only the player configurations of a chord pads preset. This is useful if you have saved very complex player settings and want to reuse them on other chord pads without changing the currently assigned chords.

▪ To load only the player settings of a chord pads preset, select **Chord Pads Presets > Load Players from Preset.**

Saving Chord Pads Presets

If you have set up the chord pads, you can save them as chord pads presets.

PROCEDURE

1. To the left of the chord pads zone, select **Chord Pads Preset > Save Chord Pads Preset**.
2. In the **New Preset** section, enter a name for the new preset.

   NOTE

   You can also define attributes for the preset.

3. Click OK to save the preset and exit the dialog.

Creating Events from Chord Pads

You can use the chords assigned to the chord pads to create chord events or MIDI parts in the **Project** window.

- To create a chord event, drag a chord pad and drop it on the chord track.

- To create a MIDI part with the length of one bar, drag a chord pad an drop it on a MIDI or instrument track.

RELATED LINKS
Recording Chord Events with a MIDI Keyboard on page 521

Editing tempo and signature

Background

Whenever you create a new project, Cubase will automatically set the tempo and time signature for this project. The tempo and signature settings can be displayed in the Tempo Track Editor.

Tempo modes

Before we go into detail about tempo and signature settings, you should understand the different tempo modes.

The tempo can either be fixed throughout the entire project (this is called "fixed tempo mode") or follow the tempo track (this is called "tempo track mode"), which may contain tempo changes.

▪ To switch between fixed tempo mode and tempo track mode, use the Tempo button on the Transport panel:
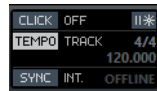
When the Tempo button is lit (and the text "Track" is shown), the tempo follows the tempo track; when it is deactivated (and the text "Fixed" is shown), a fixed tempo is used. You can also switch the tempo mode with the Activate Tempo Track button on the Tempo Track Editor toolbar.

In tempo track mode, the tempo cannot be changed on the Transport panel, i.e. the tempo information here is for display purposes only.

Signature events are always active, regardless of whether fixed tempo mode or tempo track mode is selected.

RELATED LINKS

A note about tempo-based audio tracks

The start position of audio events on the timeline depends on the current tempo setting. However, it is important to realize that the actual audio ("within" the events) will play back as recorded, regardless of any tempo changes you make. Therefore, it is good practice to make the proper tempo and time signature settings before you start recording tempo-based audio.

▪ To make an already recorded audio track follow the tempo changes, you can use the Sample Editor.

RELATED LINKS
[Sample Editor on page 281](#)

Tempo and signature display

You can view the current tempo and signature settings of your project in a number of ways:

▪ On the Transport panel.

▪ In the Tempo Track Editor.

Open the Project menu and select Tempo Track, or [Ctrl]/[Command]-click the Tempo button on the Transport panel.

RELATED LINKS
[Transport Panel on page 129](#)

About the Tempo Track Editor
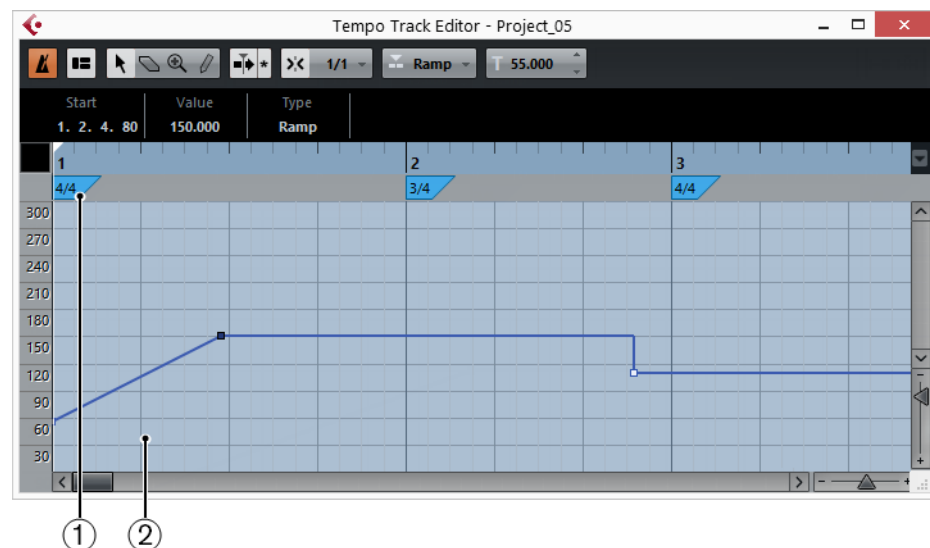
1) Time Signature area
2) Tempo curve display

The Tempo Track Editor has a toolbar, info line, and ruler just like other editors in Cubase, plus an area for the display of time signature events and a tempo curve display.

The toolbar

The toolbar contains various tools and settings:
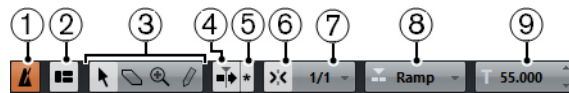
1)   Activate Tempo Track

2)   Show Info

3)   Tools

4)   Auto-Scroll

5)   Suspend Auto-Scroll when Editing

6)   Snap on/off

7)   Snap value

8)   Curve type for new tempo events

9)   The selected tempo

▪   The tools for Object Selection, Erase, Zoom and Draw are used in the same way as in other editors. The Snap and Auto-Scroll functions also work exactly like in the Project window.

   Note that in the Tempo Track Editor, the Snap function affects tempo events only. Time signature events always snap to the beginning of bars.

▪   The info line in the Tempo Track Editor allows you to change settings for selected time signature events, and the type and tempo of selected tempo curve points.

▪   The ruler in the Tempo Track Editor shows the timeline, and is similar to the ruler in the Project window.

▪   The area below the ruler shows time signature events.

▪   The main display shows the tempo curve (or, if fixed tempo mode is selected, the fixed tempo). To the left of the display you will find a tempo scale to help you quickly locate the desired tempo.

   Note that the vertical "grid lines" in the tempo curve display correspond to the display format selected for the ruler.

RELATED LINKS

Editing tempo and signature

Editing the tempo curve

IMPORTANT

This section assumes that you are working in tempo track mode, i.e. the Tempo button must be activated on the Transport panel.

Adding tempo curve points

PROCEDURE

1. Use the "Type of New Tempo Points" pop-up menu on the toolbar of the Tempo Track Editor to select whether you want the tempo to change gradually from the previous curve point to the new one ("Ramp") or change instantly to the new value ("Jump").

    You can also set this to Automatic. In this case, the types of existing tempo curve points will be used when inserting new points at the same position.

2. Select the Draw tool.

3. Click and drag in the tempo curve display to draw a tempo curve.

    When you click, the tempo display on the toolbar shows the tempo value. If Snap is activated on the toolbar, this determines at which time positions you can insert tempo curve points.
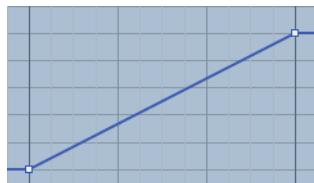
    Type of New Tempo Points set to "Ramp"
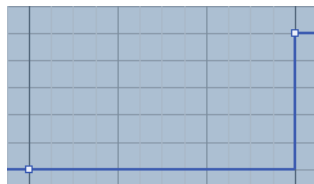
    Type of New Tempo Points set to "Jump"

    You can also click on the tempo curve with the Object Selection tool.

    This adds a single point with each click.

    NOTE

    Tempo values can also be automatically inserted by the Beat Calculator.

RELATED LINKS

545

Selecting tempo curve points

Curve points can be selected as follows:

- Using the Object Selection tool.

  The standard selection techniques apply.

- Using the Select submenu of the Edit menu.

  The options are:

All

Selects all curve points on the tempo track.

None

Deselects all curve points.

Invert

Inverts the selection – all selected curve points are deselected and all curve points that were not selected are selected instead.

In Loop

Selects all curve points between the left and right locator.

From Start to Cursor

Selects all points to the left of the project cursor.

From Cursor to End

Selects all points to the right of the project cursor.

- You can also use the left and right arrow keys on the computer keyboard to go from one curve point to the next.

  If you press [Shift] and use the arrow keys, you can select several points at the same time.

Editing tempo curve points

Curve points can be edited in the following ways:

- By clicking and dragging horizontally and/or vertically with the Object Selection tool.

  If several points are selected, all of them are moved. If Snap is activated on the toolbar, this determines to which time positions you can move curve points.

- By adjusting the tempo value in the tempo display on the Tempo Track Editor toolbar.

We recommend using the Bars+Beats display format when editing tempo curves. Otherwise, you may get confusing results. This is because moving a point will change the relationship between tempo and time. If you move a tempo point to the right and drop it at a certain time position, the mapping between tempo and time will be adjusted. Since you have changed the tempo curve, the moved point will appear at another position.

RELATED LINKS

Adjusting the curve type

You can change the curve type of a tempo curve segment at any time, using the following method:

PROCEDURE

1. With the Object Selection tool, select all curve points within the segment you want to edit.
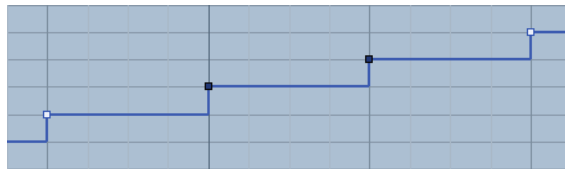
2. In the info line, click below the word "Type" to switch the curve type between "Jump" and "Ramp".

   The curve sections between the selected points are adjusted.
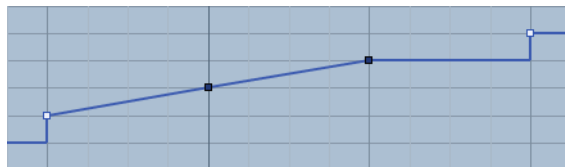
Removing tempo curve points

To remove a curve point, either click on it with the Erase tool or select it and press [Backspace]. The first tempo curve point cannot be removed.

Setting the fixed tempo

When the tempo track is deactivated, the tempo track curve is grayed out (but still visible). Since the tempo is fixed throughout the whole project, there are no tempo curve points. Instead, the fixed tempo is displayed as a horizontal black line in the tempo curve display.

To set the tempo in fixed mode:

- Adjust the value numerically in the tempo display on the Tempo Track Editor toolbar.

- On the Transport panel, click on the tempo value to select it, enter a new value and press [Enter].

Adding and editing time signature events

- To add a time signature event, click with the Draw tool in the time signature area.

  This adds a default 4/4 time signature event at the closest bar position.

- To edit the value of a time signature event, select it and adjust the value on the info line, or double-click the event and enter a new value.

  Note that there are two controls for the signature display; the left one adjusts the numerator and the right one adjusts the denominator.

- To move a time signature event, click and drag it with the Object Selection tool.

  Note that you can [Shift]-click to select multiple events. Also note that time signature events can only be positioned at the start of bars. This is also true if Snap is deactivated.

- To remove a time signature, either click on it with the Erase tool or select it and press [Backspace] or [Delete].

  The first time signature event cannot be removed.

The Beat Calculator
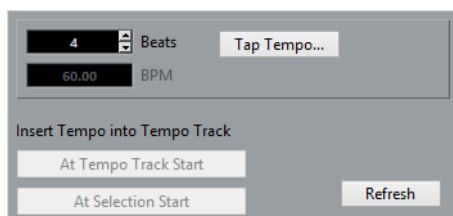
The Beat Calculator is a tool for calculating the tempo of freely recorded audio or MIDI material. It also allows you to set the tempo by tapping.

Calculating the tempo of a recording

PROCEDURE

1. In the Project window, make a selection that covers an exact number of beats of the recording.

2. Select "Beat Calculator…" from the Project menu.
   The Beat Calculator window appears.

3. In the Beats field, enter the number of beats that the selection encompasses.
   The corresponding tempo is calculated and displayed in the BPM field.
   If you need to adjust the selection, you can go back to the Project window, leaving the Beat Calculator open.
   To re-calculate the tempo after adjusting the selection, click Refresh.

4. You can also insert the calculated tempo into the tempo track by clicking one of the buttons in the lower left corner of the Beat Calculator window.
   Clicking "At Tempo Track Start" will adjust the first tempo curve point, while "At Selection Start" will add a new tempo curve point at the selection's start position, using the "Jump" curve type.

   IMPORTANT

   If fixed tempo mode is selected when you insert the calculated tempo, the fixed tempo will be adjusted, regardless of which button you click.

RELATED LINKS
   Adding tempo curve points on page 545

Using Tap Tempo

The Tap Tempo function allows you to specify a tempo by tapping:

PROCEDURE

1. Open the Beat Calculator.

2. If you want to tap the tempo to some recorded material, activate playback.

3. Click the Tap Tempo button.
   The Tap Tempo window appears.
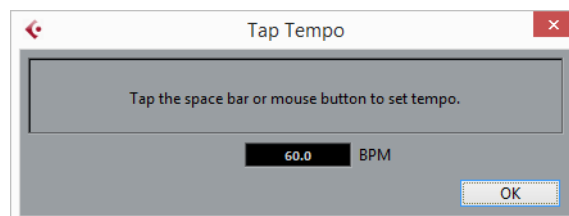
4. Tap the tempo on the Spacebar of the computer keyboard or with the mouse button.
   The tempo display will update the calculated tempo between each tap.

5.   Click OK to close the Tap Tempo dialog.

The tapped tempo is now shown in the Beat Calculator's BPM display. You can insert it into the tempo track as described above.

Adjusting the audio to the project tempo

If you want freely recorded audio to follow a fixed tempo or a different project tempo, you can use the Set Definition From Tempo dialog to save the tempo information from the tempo track in the corresponding audio clips.

PROCEDURE

1.   Select the audio events that you want to have follow the project tempo.

For example, this could be the individual tracks in a multi-track drum session.

2.   On the Audio menu, open the Advanced submenu and select the "Set Definition From Tempo…" option.

The Set Definition From Tempo dialog opens.
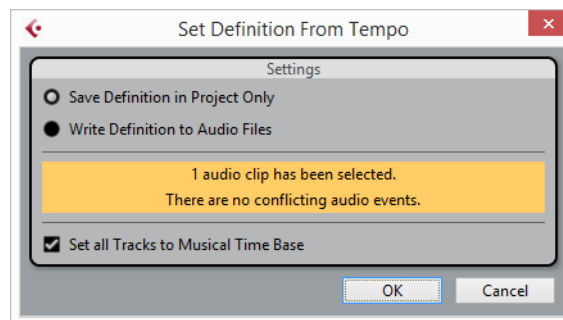
3.   Select whether you want to save the tempo information in the project file only or in the selected audio clips.

Writing the definition into the audio files allows you to use these in other projects, complete with tempo information.

4.   Select if you want to set all tracks to musical time base.

If you do not activate this option, only the tracks containing the selected events are set to musical time base.

5.   Click OK.

The tempo information is now copied into the selected audio clips and the tracks are set to musical time base. Furthermore, Musical Mode is activated for the audio events.

IMPORTANT

If you have placed audio events referring to the same audio clip at different positions on the timeline and you apply the "Set Definition From Tempo" function simultaneously to these events, new audio files are written for all the events except the first.

RESULT

The audio tracks will now follow any tempo changes in the project. Therefore, you can disable the tempo track and set a fixed tempo for your project or edit the tempo track for a new tempo map.

Export Audio Mixdown

Introduction

The Export Audio Mixdown function in Cubase allows you to mix down audio from the program to a file on your hard disk.

You always mix down an output channel. For example, if you have set up a stereo mix with tracks routed to a stereo output bus, mixing down that output bus would give you a mixdown file containing the whole mix.

Please note the following:

▪ The Export Audio Mixdown function mixes down the area between the left and right locators.

▪ When you mix down, you get what you hear – mutes, MixConsole settings, record enable, and insert effects are taken into account.

Note though that you will only include the sound of the channel you select for mixdown.

▪ MIDI tracks are not included in the mixdown!

To make a complete mixdown containing both MIDI and audio, you first need to record all your MIDI music onto audio tracks (by connecting the outputs of your MIDI instruments to your audio inputs and recording, as with any other sound source).

Mixing down to audio files

PROCEDURE

1. Set up the left and right locators to encompass the section you want to mix down.

2. Set up your tracks so that they play back the way you want.

This includes muting unwanted tracks or parts, making manual MixConsole settings and/or activating the R (Read) automation buttons for some or all MixConsole channels.

3. Open the File menu and select "Audio Mixdown…" from the Export submenu.

The Export Audio Mixdown dialog opens.
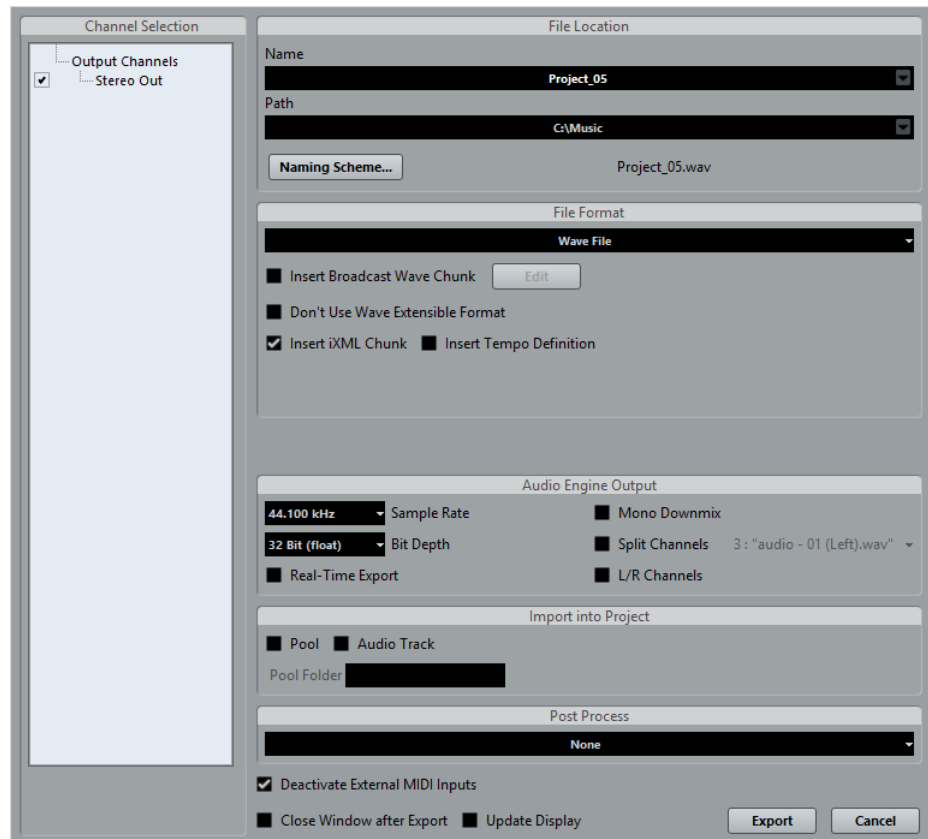
4. In the Channel Selection section to the left, select the channel you want to mix down. The list contains all output channels available in the project.

5. In the File Location section at the top you can specify a name and path for the mixdown file.

6. Select an entry from the File Format pop-up menu and make additional settings for the file to be created.

This includes codec settings, meta data, sample rate, bit depth, etc. The available options depend on the selected file format.

7. In the Audio Engine Output section, activate the Split Channels option if you want to export the two channels of a stereo bus as separate mono files.

8. Activate Real-Time Export if you want the export to happen in realtime.

9. If you want to automatically import the resulting audio file back into Cubase, activate any of the checkboxes in the "Import into Project" section.

10. If you activate Update Display, the meters will be updated during the export process.

This allows you to check for clipping, for example.

11. Click Export.

A dialog with a progress bar is displayed while the audio file is created.

To cancel the operation, you can click the Abort button.

▪ If the "Close Window after Export" option is activated, the dialog will be closed automatically.

- If the "Deactivate External MIDI Inputs" option is activated, any MIDI inputs that are performed on external devices during the export process are ignored.

- If you have activated any of the options in the "Import into Project" section, the file will be imported back into the same project.

    When playing back the reimported file, mute the original tracks so that you only hear the mixdown.

IMPORTANT

If you set the export range in such a way that the effects applied to a preceding event (e. g. reverb) reach into the next, these will be heard in the mixdown (even though the event itself is not included). If you do not want this, you need to mute the first event before exporting.

RELATED LINKS

The Export Audio Mixdown dialog

Below you will find detailed descriptions of the different sections of the dialog and the corresponding functions.

About the Channel Selection section

The Channel Selection section shows all output channels available in the project.

- You can activate/deactivate channels by clicking on the checkboxes in front of the channel names.

About the File Location section

In the File Location section you can specify a name and a path for the exported files.

At the right of the Name and the Path fields there are two pop-up menus with a number of options:

Naming Options

- Select "Set to Project Name" to set the Name field to the project name.

- Activate the "Auto Update Name" option to add a number to the specified file name every time you click the Export button.

Path Options

- Select "Choose…" to open a dialog in which you can browse for a path and enter a file name.

  The file name will automatically be shown in the Name field.

- Select an entry from the Recent Paths section to reuse a path specified for a previous export.

  This section is only shown after an export has been completed. With the "Clear Recent Paths" option you can delete all entries from the Recent Paths section.

- Activate the "Use Project Audio Folder" option to save the mixdown file in the project's Audio folder.

About the File Format section

In the File Format section, you can select the file format for your mixdown files and make additional settings that are different for each file type.

RELATED LINKS

About the Audio Engine Output section

The Audio Engine Output section contains all the settings related to the output of the Cubase audio engine. The following options are available:

Sample Rate (uncompressed file formats only)

This setting determines the frequency range of the exported audio – the lower the sample rate, the lower the highest audible frequency in the audio. In most cases, you should select the sample rate set for the project, since a lower sample rate will degrade the audio quality (mainly reducing the high frequency content) and a higher sample rate will only increase the file size, without adding to audio quality. Also consider the future usage of the file: If you plan to import the file into another application, for example, you should select a sample rate supported by that application.

If you are making a mixdown for CD burning, you should select 44.100 kHz, since this is the sample rate used on audio CDs.

Bit Depth (uncompressed file formats only)

Allows you to select 8, 16, 24 bit or 32 bit (float) files. If the file is an "intermediate mixdown" that you plan to re-import and continue working on in Cubase, we recommend that you select the 32 bit (float) option.

32 bit (float) is a very high resolution (the same resolution as used internally for audio processing in Cubase), and the audio files will be twice the size of 16 bit files.

If you are making a mixdown for CD burning, use the 16 bit option, as CD audio is always 16 bit.

In this case, we recommend dithering.

Cubase Elements only: Activate the UV-22HR dithering plug-in (see the separate PDF document "Plug-in Reference" for details). This reduces the effects of quantization noise and artifacts from being introduced when converting the audio down to 16 bit. 8 bit resolution should only be used if required, since it results in limited audio quality. 8 bit audio may be suitable in some multimedia applications, etc.

Mono Downmix

Activate this if you want to downmix the two channels of a stereo bus to a single mono file.

Split Channels

Activate this if you want to export the two channels of a stereo bus as separate mono files.

Real-Time Export

Activate this if you want the export to happen in realtime, in which case the process will take at least the same time as regular playback.

Some VST plug-ins, external instruments and effects require this in order to have enough time to update correctly during the mixdown – consult the plug-in manufacturers if uncertain.

Depending on the CPU and disk speed of your computer, it may not be possible to export all channels simultaneously if Real-Time Export is activated. If an error occurs during the realtime export, the program will automatically stop the process, reduce the number of channels and start again. Afterwards the next batch of files is exported. This is repeated as often as needed to export all selected channels. Due to this splitting of the export process in "runs", the realtime export might take longer than the actual playback would.

RELATED LINKS

About the Import into Project section

In this section you will find several options for importing the resulting mixdown files back into the existing or into a new project:

- If you activate the Pool checkbox, the resulting audio file will automatically be imported back into the Pool as a clip.

  Use the Pool Folder option to specify in which Pool folder the clip will reside.

- If you activate the Audio Track option as well, an audio event that plays the clip will be created and placed on a new audio track, starting at the left locator.

If you activate the Audio Track option, the Pool option will automatically be activated as well, and deactivating the Pool option also deactivates the Audio Track option.

RELATED LINKS
Importing Media on page 327

About the Import Options dialog

If you activate any of the options in the "Import into Project" section, the Import Options dialog will open when the export is complete.

RELATED LINKS
Importing Media on page 327

About the Post Process section

In the Post Process section, you can select a process that you want to execute after mixing down your audio file.

- You can select "Upload to SoundCloud" to launch SoundCloud, connect to your user account, and upload your mixdown.

The available file formats

- AIFF files

- AIFC files

- Wave files

- Wave 64 files

- Broadcast Wave files

- FLAC files

- MP3 files

- Ogg Vorbis files

- Windows Media Audio Pro files (Windows only)

IMPORTANT

Note that the Wave 64 file format is the only format that allows you to export files with a resulting size of more than 2 GB.

RELATED LINKS

MP3 Export

This version of Cubase provides a function for exporting your audio mixdown as MP3 files. This function is limited to 20 trial encodings or a trial period of 30 days from the installation date (whichever ends first). After this period, the function will be disabled until you purchase the MP3 encoder for Cubase.

▪ When the MP3 format is selected and you click the Export button, a window opens showing you how many trial encodings you have left. You can upgrade to an unlimited MP3 export function by clicking the "Go to Online Shop" button in the dialog.

This will take you to Steinberg's online shop where you can purchase the upgrade. Note that a working internet connection is required.

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. For AIFF files the following options are available:

Insert Broadcast Wave Chunk

This allows you to include information about the date and time of creation, a timecode position (allowing you to insert exported audio at the correct position in other projects, etc.) along with author, description, and reference text strings in the exported file. Some applications may not be able to handle files with embedded info – if you get problems using the file in another application, deactivate the option and re-export.

Edit button

By clicking this button, the **Broadcast Wave Chunk** dialog opens, where you can enter additional information that will be embedded in the exported files. If you activate the **Use this Timecode** checkbox in this dialog, the timecode position that is specified in the **Timecode** field will be used instead of the timecode position that is automatically derived from the left locator.

NOTE

In the **Preferences** dialog (**Record–Audio–Broadcast Wave** page) you can enter default text strings for author, description, and reference that will automatically be displayed in the **Broadcast Wave Chunk** dialog.

Insert iXML Chunk

This allows you to include additional project-related metadata, for example, project name, author, and project frame rate in the exported file. Some applications may not be able to handle files with embedded info. If you get problems using the file in another application, deactivate the option and re-export.

NOTE

In the **Project Setup** dialog you can find the **Author** and **Company** fields that you can use to include the corresponding data in the iXML chunk. These fields are also available in the **Preferences** dialog (**General–Personalization** page).

Insert Tempo Definition

This option is only available if **Insert iXML Chunk** is activated. When **Insert Tempo Definition** is activated, tempo information from the tempo track or the **Definition** tab of the **Sample Editor** is included in the iXML chunk of exported files. This is useful if you want to use the files in other projects where they need to adapt to the project tempo.

AIFC files

AIFC stands for Audio Interchange File Format Compressed, a standard defined by Apple Inc. These files support compression ratios as high as 6:1 and contain tags in the header. AIFC files have the extension ".aifc" and are used on most computer platforms.

AIFC files support the same options as AIFF files.

Wave files

Wave files have the extension ".wav" and are the most common file format on the PC platform.

Wave files support the same options as AIFF files and have one additional option:

▪ Don't Use Wave Extensible Format

The Wave Extensible format contains additional metadata, such as the speaker configuration. It is an extension to the normal Wave format that some applications may not be able to handle.

If you get problems using the Wave file in another application, activate this option and re-export.

Wave 64 files

Wave 64 is a proprietary format developed by Sonic Foundry Inc. In terms of audio quality, Wave 64 files are identical to standard Wave files, but in the file headers Wave 64 files use 64-bit values for addressing where Wave files use 32-bit values. The consequence of this is that Wave 64 files can be considerably larger than standard Wave files. Wave 64 is therefore a good file format choice for really long recordings (file sizes over 2 GB). Wave 64 files have the extension ".w64".

Wave 64 files support the same options as AIFF files.

Broadcast Wave files

Broadcast Wave files are Wave files with additional meta data. To create a Broadcast Wave file, select either Wave or Wave 64 as the file format and activate the Insert Broadcast Wave Chunk option. Click Edit if you wish to edit the chunk information, otherwise the defaults as specified in the Preferences dialog (Record–Audio–Broadcast Wave page) will be used.

Broadcast Wave files have the extension ".wav".

Broadcast Wave files support the same options as Wave files.

FLAC files

Free Lossless Audio Codec files are audio files that are typically 50 to 60 % smaller than regular Wave files, for example. FLAC is an open source format.

Use the Compression Level fader to select 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.

MPEG 1 Layer 3 files

MPEG 1 Layer 3 files have the extension ".mp3". By use of advanced audio compression algorithms, MP3 files can be made very small, yet maintaining good audio quality. In the File Format section, the following options are available for MPEG 1 Layer 3 files:

Bit Rate fader

By moving this fader, you can select a bit rate for the MP3 file. As a rule, the higher the bit rate, the better the audio quality and the larger the file. For stereo audio, 128 kBit/s is often considered to result in "good" audio quality.

Sample Rate pop-up menu

On this pop-up menu you can select a Sample Rate for the MP3 file.

High Quality Mode option

When this is activated, the encoder will use a different resampling mode, which can give better results depending on your settings. In this mode, you cannot specify the Sample Rate, but only the Bit Rate for the MP3 file.

Insert ID3 Tag option

This allows you to include ID3 Tag information in the exported file.

Edit ID3 Tag button

When you click this, the ID3 Tag dialog opens, in which you can enter information about the file. This additional information will be embedded as text strings in the file, and can be displayed by most mp3 playback applications.

Ogg Vorbis files

Ogg Vorbis is an open source, patent-free audio encoding and streaming technology, offering compressed audio files (extension ".ogg") of small size, but with comparatively high audio quality.

In the File Format section you will find only one setting: the Quality fader. The Ogg Vorbis encoder uses variable bit rate encoding, and the Quality setting determines between which limits the bit rate will vary. Generally speaking, the higher the Quality setting, the higher the sound quality but also the larger the files.

Windows Media Audio Pro files (Windows only)

This is a continuation of the Windows Media Audio format developed by Microsoft Inc. Due to the advanced audio codecs and lossless compression used, WMA Pro files can be decreased in size with no loss of audio quality. Furthermore, WMA Pro features the possibility of mixing down to 5.1 surround sound. The files have the extension ".wma".

When you select "Windows Media Audio File" as the file format, you can click the "Codec Settings…" button to open the "Windows Media Audio File Settings" window.
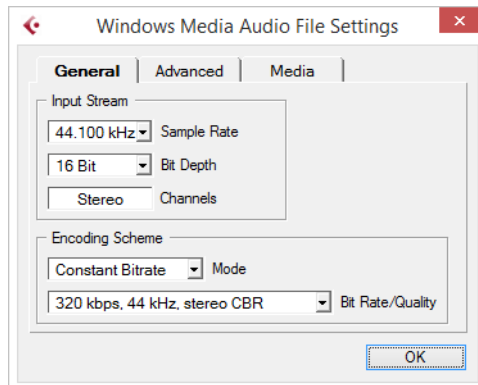
Note that the configuration options may vary, depending on the chosen output channels.

General Tab

In the Input Stream section, you set the sample rate (44.1, 48 or 96 kHz) and the bit resolution (16 bit or 24 bit) of the encoded file. Set these to match the sample rate and bit resolution of the source material. If no value matches that of your source material, use the closest available value that is higher than the actual value. For example, if you are using 20 bit source material, set the bit resolution to 24 bit rather than 16 bit.

- The setting in the Channels field depends on the chosen output and cannot be changed manually.

  The settings in the Encoding Scheme section are used for defining the desired output from the encoder.

  Make settings appropriate for the intended use of the file. If the file will be downloaded or streamed on the internet, you might not want too high bit rates, for example. See below for descriptions of the options.

- Mode pop-up menu

  The WMA encoder can use either a constant bit rate or a variable bit rate, or it can use lossless encoding for encoding to stereo.

  The options on this menu are as follows:

Constant Bitrate

This will encode to a file with a constant bit rate (set in the Bit Rate/Channels menu, see below).

Constant bit rate is preferably used if you want to limit the size of the final file. The size of a file encoded with a constant bit rate is always the bit rate times the duration of the file.

Variable Bitrate

Encodes to a file with a variable bit rate, according to a quality scale (the desired quality is set in the Bit Rate/Quality menu, see below).

When you encode with variable bit rates, the bit rate fluctuates depending on the character and intricacy of the material being encoded. The more complex passages in the source material, the higher the bit rate – and the larger the final file.

Lossless

Encodes to a file with lossless compression.

- Bit Rate/Quality pop-up menu

This menu allows you to set the desired bit rate. The available bit rate settings vary depending on the selected mode and/or output channels (see above). If the Variable Bitrate mode is used, the menu allows you to select from various levels of quality, with 10 being the lowest and 100 the highest. Generally, the higher the bitrate or quality you select, the larger the final file will be.

Advanced tab

- Dynamic Range Control

These controls allow you to define the dynamic range of the encoded file. The dynamic range is the difference in dB between the average loudness and the peak audio level (the loudest sounds) of the audio. These settings affect how the audio is reproduced if the file is played on a Windows computer with a player from the Windows Media series, and the "Quiet Mode" feature of the player is activated to control the dynamic range.

The dynamic range is automatically calculated during the encoding process, but you can specify it manually as well.

To manually specify the dynamic range, first put a checkmark in the box to the left by clicking in it, and then enter the desired dB values in the Peak and Average fields. You can enter any value between 0 and -90dB. Note, however, that it is usually not recommended to change the Average value, since this affects the overall volume level of the audio and therefore can have a negative effect on the audio quality.

The Quiet Mode in a Windows Media player can be set to one of three settings. Below, these settings are listed together with an explanation of how the Dynamic Range settings affect them:

- Off: If Quiet Mode is off, the dynamic range settings that were automatically calculated during the encoding will be used.

- Little Difference: If this is selected and you have not manually changed the dynamic range settings, the peak level will be limited to 6dB above the average level during playback. If you have manually specified the dynamic range, the peak level will be limited to the mean value between the peak and average values you specified.

- Medium Difference: If this is selected and you have not manually changed the dynamic range settings, the peak level will be limited to 12dB above the average level. If you have changed the dynamic range, the peak level will be limited to the peak value you specified.

Media tab

In these fields you can enter a number of text strings with information about the file – title, author, copyright information and a description of its contents. This information will then be embedded in the file header and can be displayed by some Windows Media Audio playback applications.

Synchronization

Background

What is synchronization?

Synchronization is the process of getting two or more devices to play back together at the same exact speed and position. These devices can range from audio and video tape machines to digital audio workstations, MIDI sequencers, synchronization controllers, and digital video devices.

Synchronization basics

There are three basic components of audio/visual synchronization: position, speed, and phase. If these parameters are known for a particular device (the master), then a second device (the slave) can have its speed and position "resolved" to the first in order to have the two devices play in perfect sync with one another.

Position

The position of a device is represented by either samples (audio word clock), video frames (timecode), or musical bars and beats (MIDI clock).

Speed

The speed of a device is measured either by the frame rate of the timecode, the sample rate (audio word clock) or by the tempo of the MIDI clock (bars and beats).

Phase

Phase is the alignment of the position and speed components to each other. In other words, each pulse of the speed component should be aligned with each measurement of the position for the most accuracy. Each frame of timecode should be perfectly lined up with the correct sample of audio. Put simply, phase is the very precise position of a synchronized device relative to the master (sample accuracy).

Master and slave

In this document, the following terms are used:

- The "timecode master" is the device generating position information or timecode.

- The "timecode slave" is any device receiving the timecode and synchronizing or "locking" to it.

Timecode (positional references)

The position of any device is most often described using timecode. Timecode represents time using hours, minutes, seconds, and frames to provide a location for each device. Each frame represents a visual film or video frame.

Timecode can be communicated in several ways:

- LTC (Longitudinal Timecode) is an analog signal that can be recorded on tape. It should be used for positional information primarily. It can also be used for speed and phase information as a last resort if no other clock source is available.

- VITC (Vertical Interval Timecode) is contained within a composite video signal. It is recorded onto video tape and is physically tied to each video frame.

- MTC (MIDI Timecode) is identical to LTC except that it is a digital signal transmitted via MIDI.

Timecode standards

Timecode has several standards. The subject of the various timecode formats can be very confusing due to the use and misuse of the shorthand names for specific timecode standards and frame rates. The reasons for this confusion are described in detail below. The timecode format can be divided into two 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 four timecode standards:

24 fps Film (F)

This frame count is the traditional count for film. It is also used for HD video formats and commonly referred to as "24 p". However, with HD video, the actual frame rate or speed of the video sync reference is slower, 23.976 frames per second, so timecode does not reflect the actual realtime on the clock for 24p HD video.

25 fps PAL (P)

This is the broadcast video standard frame count for European (and other PAL countries) television broadcast.

30 fps non-drop SMPTE (N)

This is the frame count of NTSC broadcast video. However, the actual frame rate or speed of the video format runs at 29.97 fps. This timecode clock does not run in realtime. It is slightly slower by 0.1 %.

30 fps drop-frame SMPTE (D)

The 30 fps drop-frame count is an adaptation that allows a timecode display running at 29.97 fps to actually show the clock-on-the-wall-time of the timeline by "dropping" or skipping specific frame numbers in order to "catch the clock up" to realtime.

Confused? Just remember to keep the timecode standard (or frame count) and frame rate (or speed) separate.

Frame rate (speed)

Regardless of the frame counting system, the actual speed at which frames of video go by in realtime is the true frame rate.

In Cubase the following frame rates are available:

24 fps

This is the true speed of standard film cameras.

25 fps

This is the frame rate of PAL video.

29.97 fps

This is the frame rate of NTSC video. The count can be either non-drop or drop-frame.

30 fps

This frame rate is not a video standard anymore but has been commonly used in music recording. Many years ago it was the black and white NTSC broadcast standard. It is equal to NTSC video being pulled up to film speed after a 2-3 telecine transfer.

Frame count vs. frame rate

Part of the confusion in timecode stems from the use of "frames per second" in both the timecode standard and the actual frame rate. When used to describe a timecode standard, frames per second defines how many frames of timecode are counted before one second on the counter increments. When describing frame rates, frames per second define how many frames are played back during the span of one second of realtime. In other words: Regardless of how many frames of video there are per second of timecode (frame count), those frames can be moving at different rates depending on the speed (frame rate) of the video format. For example, NTSC timecode (SMPTE) has a frame count of 30 fps. However, NTSC video runs at a rate of 29.97 fps. So the NTSC timecode standard known as SMPTE is a 30 fps standard that runs at 29.97 realtime.

Clock sources (speed references)

Once the position is established, the next essential factor for synchronization is the playback speed. Once two devices start playing from the same position, they must run at exactly the same speed in order to remain in sync. Therefore, a single speed reference must be used and all devices in the system must follow that reference. With digital audio, the speed is determined by the audio clock rate. With video, the speed is determined by the video sync signal.

Audio clock

Audio clock signals run at the speed of the sample rate used by a digital audio device and are transmitted in several ways:

Word clock

Word clock is a dedicated signal running at the current sample rate that is fed over BNC coaxial cables between devices. It is the most reliable form of audio clock and is relatively easy to connect and use.

AES/SPDIF Digital Audio

An audio clock source is embedded within AES and SPDIF digital audio signals. This clock source can be used as a speed reference. Preferably, the signal itself does not contain any actual audio (digital black), but any digital audio source can be used if necessary.

ADAT Lightpipe

ADAT Lightpipe, the 8-channel digital audio protocol developed by Alesis, also contains audio clock and can be used as a speed reference. It is transmitted via optical cables between devices.

NOTE

Do not confuse the audio clock embedded in the Lightpipe protocol with ADAT Sync, which has timecode and machine control running over a proprietary DIN plug connection.

MIDI clock

MIDI clock is a signal that uses position and timing data based on musical bars and beats to determine location and speed (tempo). It can perform the same function as a positional reference and a speed reference for other MIDI devices. Cubase supports sending MIDI clock to external devices but cannot slave to incoming MIDI clock.

IMPORTANT

MIDI clock cannot be used to synchronize digital audio. It is only used for MIDI devices to play in musical sync with one another. Cubase does not support being a MIDI clock slave.

The Project Synchronization Setup dialog

Cubase's Project Synchronization Setup dialog provides a central place to configure a complex synchronized system. In addition to settings for timecode sources, project setup parameters are available along with basic transport controls for testing the system.

To open the Project Synchronization Setup dialog, proceed as follows:

- On the Transport menu, select the "Project Synchronization Setup…" option.
- On the Transport panel, [Ctrl]/[Command]-click the Sync button.

The dialog is organized into sections separating related groups of settings. The arrows shown between the various sections of the dialog indicate how settings in one section influence settings in another section. In the following, the available sections are described in detail.

The Cubase Section

At the center of the Project Synchronization Setup dialog is the Cubase section. It is provided to help you visualize the role that Cubase takes in your setup. It shows which external signals enter or leave the application.

Timecode Source

The Timecode Source setting determines whether Cubase is acting as timecode master or slave.
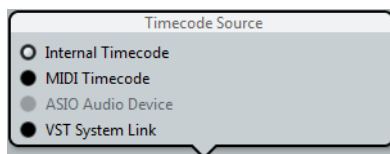
When set to "Internal Timecode", Cubase is the timecode master, generating all position references for any other device in the system. The other options are for external timecode sources. Selecting any of these, makes Cubase a timecode slave when the Sync button is activated.

Internal Timecode

Cubase generates timecode based on the project timeline and project setup settings. The timecode will follow the format specified in the Project Setup section.

MIDI Timecode

Cubase acts as a timecode slave to any incoming MIDI timecode (MTC) on the port(s) selected in the MIDI Timecode section, to the right of the Timecode Source section.

Selecting "All MIDI Inputs" allows Cubase to sync to MTC from any MIDI connection. You can also select a single MIDI port for receiving MTC.

ASIO Audio Device

This option is only available with audio cards that support ASIO Positioning Protocol. These audio cards have an integrated LTC reader or ADAT sync port and can perform a phase alignment of timecode and audio clock.

VST System Link

VST System Link can provide all aspects of sample-accurate synchronization between other System Link workstations.

RELATED LINKS
Working with VST System Link on page 572

Timecode Preferences

When MIDI Timecode is selected, additional options become available in the Cubase section, providing several options for working with external timecode.
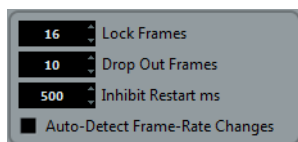
Lock Frames

This setting determines how many full frames of timecode it takes for Cubase to try and establish sync or "lock". If you have an external tape transport with a very short start-up time, try lowering this number to make lock-up even faster. This option can only be set to multiples of two.

Drop Out Frames

This setting determines the amount of missed timecode frames it takes for Cubase to stop. Using LTC recorded on an analog tape machine can result in some amount of drop outs. Increasing this number allows Cubase to "free-wheel" over missed frames without stopping. Lowering this number causes Cubase to stop sooner once the tape machine has stopped.

Inhibit Restart ms

Some synchronizers still transmit MTC for a short period after an external tape machine has been stopped. These extra frames of timecode sometimes cause Cubase to restart suddenly. The "Inhibit Restart ms" setting allows you to control the amount of time in milliseconds that Cubase will wait to restart (ignoring incoming MTC) once it has stopped.

Auto-Detect Frame-Rate Changes

Cubase can notify the user when the frame rate of timecode changes at any point. This is helpful in diagnosing problems with timecode and external devices. This notification will interrupt playback or recording. Deactivating this option will avoid any interruption in playback or recording.

IMPORTANT

If there is a discrepancy between the project frame rate in Cubase and incoming timecode, Cubase might still be able to lock to the incoming timecode. If the user is unaware of these differences, problems can arise later in postproduction.

MIDI Timecode Destinations

Cubase can send MTC to any MIDI port. Use this section to specify the MIDI ports to which MTC is routed. Devices that can lock to MTC will chase Cubase's timecode position.

NOTE

Some MIDI interfaces send MTC over all ports by default. If this is the case, only select one port of the interface for MTC.
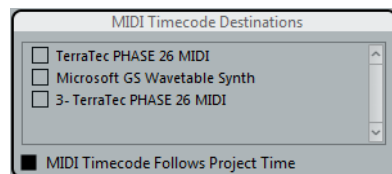
MIDI Timecode Follows Project Time

Activate this option to ensure that the MTC output follows Cubase's time position at all times including looping, locating, or jumping while playing. If not, MTC will continue on without changing locations at a loop or jump point until playback stops.

MIDI Clock Destinations

Some MIDI devices like drum machines can match their tempo and location to incoming MIDI clock. Select any MIDI ports that you wish to output MIDI clock.
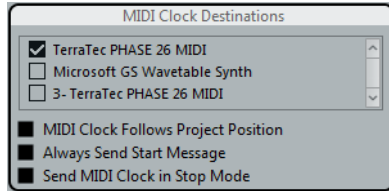
MIDI Clock Follows Project Position

Activate this option to ensure that the MIDI clock device follows Cubase when looping, locating, or jumping while playing.

NOTE

Some older MIDI devices might not respond well to these positioning messages and could take some time synchronizing to the new location.

Always Send Start Message

MIDI clock transport commands include Start, Stop, and Continue. However, some MIDI devices do not recognize the Continue command. By activating the "Always Send Start Message" option, you can avoid this problem with specific MIDI devices.

Send MIDI Clock in Stop Mode

Activate this option if you are working with a device that needs MIDI clock to run continuously in order to operate arpeggiators and loop generators.

Synchronized operation

Once you have connected all the devices that will be synchronized, it is important to understand how Cubase operates in Sync mode. Sync mode is enabled by activating the Sync button on the Transport panel.
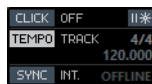
Sync mode

When you activate the Sync button, the following happens:

▪ Cubase awaits incoming timecode from the chosen timecode source defined in the Project Synchronization Setup dialog in order to play.

 Cubase will detect incoming timecode, locate to its current position, and start playback in sync with the incoming timecode.

Working with VST System Link

VST System Link is a network system for digital audio that allows you to have several computers working together in one large system. Unlike conventional networks it does not require Ethernet cards, hubs, or CAT-5 cables; instead it uses the kind of digital audio hardware and cables you probably already possess in your studio.

VST System Link has been designed to be simple to set up and operate, yet give enormous flexibility and performance gains in use. It is capable of linking computers in a "ring" network (the System Link signal is passed from one machine to the next, and eventually returns to the first machine). VST System Link can send its networking signal over any type of digital audio cable, including S/PDIF, ADAT, TDIF, or AES, as long as each computer in the system is equipped with a suitable ASIO compatible audio interface.

Linking up two or more computers gives you vast possibilities:

▪ Dedicate one computer to running VST instruments while recording audio tracks on another (not in Cubase LE).

▪ If you need lots of audio tracks, you may simply add tracks on another computer.

▪ You could have one computer serve as a "virtual effect rack", running CPU-intensive send effect plug-ins only.

▪ Since you can use VST System Link to connect different VST System Link applications on different platforms, you can take advantage of effect plug-ins and VST instruments that are specific to certain programs or platforms.

Requirements

The following equipment is required for VST System Link operation:

▪ Two or more computers.

 These can be of the same type or use different operating systems – it does not matter. For example, you can link an Intel-based PC to an Apple Macintosh without problems.

▪ Each computer must have audio hardware with specific ASIO drivers.

- The audio hardware must have digital inputs and outputs.

  To be able to connect the computers, the digital connections must be compatible (i.e. the same digital formats and connection types must be available).

- At least one digital audio cable must be available for each computer in the network.

- A VST System Link host application must be installed on each computer.

  Any VST System Link application can connect to another.

Additionally, use of a KVM switchbox is recommended.

Using a KVM switchbox

Whether you want to set up a multi-computer network or a small network in a limited space, it is a good idea to invest in a KVM (Keyboard, Video, Mouse) switchbox. With one of these you can use the same keyboard, monitor, and mouse to control each computer in the system, and you can switch between computers very rapidly. If you decide not to go this route, the network will function just the same, but you may end up doing a lot of jumping from one machine to the other while setting up!

Making connections

Below, we assume that you are connecting two computers. Should you have more than two computers, it is still best to start with two and add the others one by one once the system is working – this makes troubleshooting easier if you run into problems. For two computers, you will need two digital audio cables, one in each direction:

PROCEDURE

1. Use the first digital audio cable to connect the digital output of computer 1 to the digital input of computer 2.

2. Use the other cable to connect the digital output of computer 2 to the digital input of computer 1.

   If a card has more than one set of inputs and outputs, choose whichever one that suits you – for simplicity usually the first set is best.

Synchronization

Before you proceed, you need to make sure that the clock signals on your ASIO cards are synchronized correctly. This is essential when cabling any kind of digital audio system, not just VST System Link.

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All digital audio cables by definition always carry a clock signal as well as audio signals, so you do not have to use a special word clock input and output for this (although you may find that you get a slightly more stable audio system if you do, especially when using multiple computers).

The clock mode or sync mode is set up in the ASIO control panel of the audio hardware. Proceed as follows:

PROCEDURE

1. From the Devices menu, open the Device Setup dialog.

2. On the VST Audio System page, select your audio interface from the ASIO Driver pop-up menu.

    In the Devices list, the name of the audio interface now appears as a subentry to the "VST Audio System" entry.

3. In the Devices list, select your audio interface.

4. Click the Control Panel button.

    The ASIO control panel appears.

5. Open the ASIO control panel on the other computer as well.

    If you are using another VST System Link host application on that computer, check its documentation for details on how to open the ASIO control panel.

6. Now you need to make sure that one audio card is set to be the clock master and all other cards are set to be clock slaves (i.e. they listen for the clock signal coming from the clock master).

    The naming and procedure for this differs depending on the audio hardware – consult its documentation if required. If you are using Steinberg Nuendo ASIO hardware, all cards default to the AutoSync setting. In this case you must set one of the cards (and only one) to "Master" in the Clock Mode section of the control panel.

RESULT

Typically, the ASIO control panel for an audio card contains some indication of whether or not the card receives a proper sync signal, including the sample rate of that signal.

This is a good indication that you have connected the cards and set up clock sync properly. Check your audio hardware's documentation for details.

IMPORTANT

It is very important that only one card is the clock master, otherwise the network cannot function correctly. Once you have set this up, all the other cards in the network will take their clock signal from this card automatically.

The only exception to this procedure is if you are using an external clock – from a digital mixing desk or a special word clock synchronizer, for example. In that case you must leave all your ASIO cards in clock slave or AutoSync mode and make sure that each of them is listening for the signal coming from the synchronizer. This signal is usually passed through your ADAT cables or word clock connectors in a daisy chain fashion.

VST System Link and latency

The general definition of latency is the amount of time it takes any system to respond to whatever messages are sent to it. For example, if your system's latency is high and you play VST instruments in realtime, you will get a noticeable delay between when you press a key and when you hear the sound of the VST instrument. Nowadays, most ASIO-compatible audio cards are capable of operating with very low latencies. Also, all VST applications are designed to compensate for latency during playback, making the playback timing tight.

However, the latency time of a VST System Link network is the total latency of all the ASIO cards in the system added together. Therefore it is extra important to minimize the latency times for each computer in the network.

IMPORTANT

The latency does not affect the synchronization – it is always perfectly in time. But it can affect the time it takes to send and receive MIDI and audio signals, or make the system seem sluggish.

To adjust the latency of a system, you adjust the size of the buffers in the ASIO control panel – the lower the buffer size, the lower the latency. It is best to keep to fairly low latencies (buffer sizes) if your system can handle it – about 12 ms or less is usually a good idea.

Setting up your software

Now it is time to set up your programs. The procedures below describe how to set things up in Cubase. If you are using another program on the other computer, please refer to its documentation.

Setting the sample rate

The projects in both programs must be set to use the same sample rate. Select "Project Setup…" from the Project menu and make sure that the sample rate is the same in both systems.

Streaming digital audio between applications

PROCEDURE

1. Create input and output busses in both applications and route these to the digital inputs and outputs.

    The number and configuration of the busses depend on your audio hardware and on your needs. If you have a system with eight digital i/o channels (such as an ADAT connection), you could create several stereo or mono busses, a surround bus together with a stereo bus, or any combination you need. The important thing is that you should have the same configuration in both applications – if you have four stereo output busses on computer 1, you want four stereo input busses on computer 2, etc.

2. Set things up so that computer 1 plays back some audio.

For example, you could import an audio file and play it back in Cycle mode.

3. In the Inspector or MixConsole, make sure that the channel containing the audio material is routed to one of the digital output busses.

4. On computer 2, open the MixConsole and locate the corresponding digital input bus.

The audio being played back should now "appear" in the program running on computer 2. You should see the input bus level meters moving.

5. Reverse this procedure so that computer 2 plays back and computer 1 "listens".

RESULT

Now you have verified that the digital connection works as it should.

NOTE

From this point on in this chapter, we refer to the busses connected to the digital inputs and outputs as "VST System Link busses".

Settings for the audio hardware

When you exchange VST System Link data between computers, it is important that the digital information is not changed in any way between the programs. Therefore, you should open the control panel (or additional application) for your audio hardware and make sure that the following conditions are met:

- If there are additional "format settings" for the digital ports that you use for VST System Link data, make sure that these are turned off.

  For example, if you are using an S/PDIF connection for VST System Link, make sure that "Professional format", Emphasis, and Dithering are turned off.

- If your audio hardware has a mixer application allowing you to adjust the levels of digital inputs and outputs, make sure that this mixer is disabled or that the levels for the VST System Link channels are set to ±0dB.

- Similarly, make sure no other forms of DSP (pan, effects, etc.) are applied to the VST System Link signal.

Notes for Hammerfall DSP users

If you are using RME Audio Hammerfall DSP audio hardware, the Totalmix function allows for extremely complex signal routing and mixing in the audio hardware. This can in some situations lead to "signal loops" in which case the VST System Link will not work. If you want to make absolutely sure this will not cause any problems, select the default or "plain" preset for the Totalmix function.

Activating VST System Link

Before you proceed, you need to make sure that VST System Link is set as the timecode source in the Project Synchronization Setup dialog and that the desired Sync options are activated.

After setting up the inputs and outputs, you now need to define which input/output will carry the actual VST System Link information.

The VST System Link networking signal is carried on only one bit of one channel. This means that if you have an ADAT-based system which normally carries eight channels of 24-bit audio, once you activate VST System Link you will have seven channels of 24-bit audio and one channel of 23-bit audio (the least significant bit of this last channel will be used for networking). In practice this makes no discernible difference to the audio quality, since you will still have around 138 dB headroom on this channel.

To set things up, open the VST System Link panel:

PROCEDURE

1.   From the Devices menu, open the Device Setup dialog.

2.   In the Devices list to the left, select the "VST System Link" entry.
      The VST System Link settings are shown to the right of the Devices list.
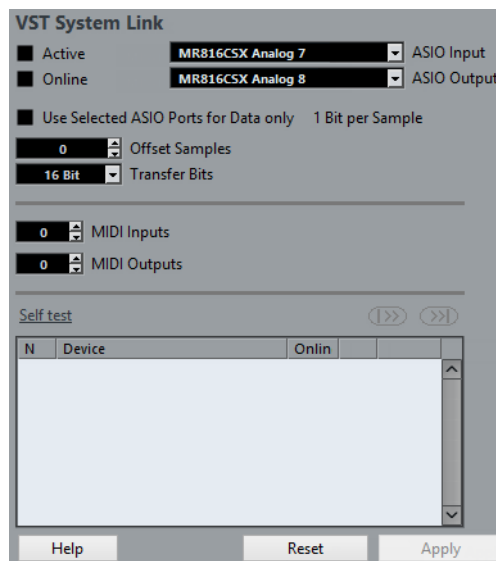
3.   Use the ASIO Input and ASIO Output pop-up menus to define which channel is the networking channel.

4.   Activate the Active checkbox at the top left of the panel.

5.   Repeat the steps above for every computer in the network.

RESULT

As the computers are made active, you should see the Sending and Receiving indicators flashing on each active computer, and the name of each computer should appear in the list at the bottom of the pane. Each computer is assigned a random number – do not worry about this, it is just so the network knows internally which one is which.

- You can double-click on the name in bold (which is the name of the computer you are currently working on) and set it to whatever other name you wish.

  This name will appear in the VST System Link window of every computer on the network.

NOTE

If you do not see the name of each computer appearing once you have made it active, you need to check your settings. Go through the procedure above again and make sure that all ASIO cards are listening to the digital clock signals correctly, and that each computer has the correct inputs and outputs assigned to the VST System Link network.

RELATED LINKS

Putting the network online

After each computer's name you will see whether it is online or not. When a computer is online, it will receive transport and timecode signals, and its sequencer application can be started and stopped by remote control. If it is off-line, it can only be started from its own keyboard – it is effectively an independent machine, although it is still on the network.

NOTE

Note that any computer can control any and all of the others – VST System Link is a peer-to-peer network and there is no absolute "master" computer.

To put all computers online, proceed as follows:

PROCEDURE

1. For all computers, activate the Online checkbox on the VST System Link page.

2. Start playback on one computer to check that the system is working – all computers should start almost instantly and play perfectly in time, with sample-accurate precision.
   - The Offset Samples setting allows you to adjust whether one machine will play slightly ahead or behind the rest.

     This is normally not needed, but occasionally with some hardware you may find that the lock is a few samples out. For now, leave it set to 0 – it will most likely be what you want.

- The Transfer Bits setting allows you to specify whether you want to transfer 24 or 16 bits. This allows you to use older audio cards which do not support transfer of 24 bits.

RESULT

VST System Link sends and understands all transport commands (such as play, stop, fast forward, rewind, etc.). This allows you to control the entire network from one computer without a problem – try it! If you jump to a locator point on one machine, all other machines will also instantly jump to that locator point.

IMPORTANT

Make sure that all computers have their tempos set to the same value, otherwise your synchronization will be seriously skewed.

Scrubbing via VST System Link

You can scrub on one computer and have the video and audio on another computer scrub along. However, the playback on the linked systems may not be perfectly in sync while scrubbing and there are some further restrictions you should bear in mind when scrubbing via VST System Link:

- Use the jog/shuttle control on the Transport panel or a remote controller for scrubbing.

  Scrubbing with the Scrub tool does not work over a VST System Link connection.

- Always use the system where you started scrubbing to control the scrubbing, e.g. change the scrub speed or stop scrubbing.

  Changing the scrub speed on a remote system will only change the speed on the local system.

- You can start playback on all systems.

  This stops scrubbing and enters playback on all systems in sync.

Using MIDI

As well as supplying transport and sync control, VST System Link also supplies up to 16 MIDI ports, with 16 channels each.

PROCEDURE

1. Use the MIDI Inputs and MIDI Outputs value fields to specify the number of MIDI ports you need.

   The default value is 0 MIDI In and 0 MIDI Out ports.

2. In the Project window, create a MIDI track and open the Inspector (top section).

3.   If you now open the Input or Output Routing pop-up menu, you will find the specified System Link ports added to the list of MIDI inputs or outputs.

This allows you to route MIDI tracks to VST instruments running on another computer, as described in the application examples.

RELATED LINKS

The "Use Selected ASIO Ports for Data only" setting

If you are sending huge amounts of MIDI data at once, there is a small possibility that you might run out of bandwidth on your VST System Link network. This will manifest itself by notes "choking" or timing becoming erratic.

If this happens, you can devote more bandwidth to MIDI by activating the "Use Selected ASIO Ports for Data only" option on the VST System Link page of the Device Setup dialog. When this is activated, the VST System Link information will be sent on the entire channel instead of just one bit, more than enough for all the MIDI you could ever hope to use. The downside is that you can no longer use this ASIO channel for audio transfer (do not connect it to a speaker!), thus leaving you with only 7 audio channels in our ADAT cable example. Depending on how you work, this might be a reasonable compromise.

Hearing the network audio

If you are using an external mixing desk, hearing your audio really is not an issue – just plug the outputs of each computer into the desired channels on the external mixing desk, start playback on one of the computers, and you are good to go.

However, many people prefer to mix internally inside the computer and just use a desk for monitoring (or maybe not use any external mixer at all). In this case you will need to select one computer to be your "main mix computer" and send the audio from your other computers into this.

In the following example, we assume you are using two computers, with computer 1 as your main mix computer and computer 2 running two additional stereo audio tracks, an FX channel track with a reverb plug-in and a VST instrument plug-in with stereo outputs.

PROCEDURE

1. Set things up so that you can listen to the audio playback from computer 1.

   In other words, you need an unused set of outputs, e.g. an analog stereo output, connected to your monitoring equipment.

2. On computer 2, route each of the two audio tracks to a separate output bus.

   These should be busses connected to the digital outputs – let's call them Bus 1 and 2.

3. Route the FX channel track to another VST System Link bus (Bus 3).

4. Route the VST instrument channel to yet another bus (Bus 4).

5. Go back to computer 1 and check the corresponding four 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 four new stereo audio tracks on computer 1 and route these to the output bus you use for listening, e.g. to the analog stereo outputs.

7. For each of the audio tracks, select one of the four input busses.

   Now, each computer 2 bus is routed to a separate audio channel on computer 1.

8. Activate monitoring for the four tracks.

RESULT

If you now start playback, the audio from computer 2 will be sent "live" to the new tracks on computer 1, allowing you to hear them together with any tracks you play back on computer 1.

Adding more tracks

What if you have more audio tracks than you have VST System Link busses (physical outputs)? Then you just use the computer 2 mixer as a submixer: Route several audio channels to the same output bus and adjust the output bus level if needed.

NOTE

If your audio cards have multiple sets of input and output connections, you can link up multiple ADAT cables and send audio via any of the busses on any of the cables.

Internal mixing and latency

One problem with mixing inside the computer is the latency issue we mentioned earlier. The VST engine always compensates for record latencies, but if you are monitoring through computer 1 you will hear a processing delay while you listen to signals coming from your other computers (not on your recording!). If your audio card in computer 1 supports ASIO Direct Monitoring you should definitely turn this on. You can find the setting on the VST Audio System device panel for your hardware. Most modern ASIO cards support this function. If yours does not, you may want to change the Offset Samples value on the VST System Link page to compensate for any latency issues.

RELATED LINKS
ASIO Direct Monitoring on page 150

Setting up a larger network

Setting up a larger network is not much more difficult than a two-computer network. The main thing to remember is that VST System Link is a daisy chain system. In other words, the output of computer 1 goes to the input of computer 2, the output of computer 2 goes to the input of computer 3, and so on around the chain. The output of the last computer in the chain must always go back into the input of computer 1, to complete the ring.

Once you have done this, the transmission of all the transport, sync, and MIDI information to the whole network is handled pretty much automatically. However, where you may run into confusion in a large network is in the transmission of audio signals back to a central mix computer.

If you have lots of hardware inputs and outputs on your ASIO cards, you do not have to send audio via the chain at all, but can transmit it directly to the master mix computer via one or more of its other hardware inputs. For example, if you have a Nuendo Digiset interface or 9652 card on computer 1, you could use ADAT cable 1 for networking, ADAT cable 2 as a direct audio input from computer 2, and ADAT cable 3 as a direct audio input from computer 3.

You can also transmit audio via the ring system if you do not have enough hardware I/Os for direct audio transmission. For example, in a four-computer scenario you could send audio from computer 2 into a channel in the mixer in computer 3, from there to a channel in the mixer in computer 4, and from there back to the master mixer in computer 1. This can certainly be tricky to set up, so for complex networks it is generally recommended to use ASIO cards with at least three separate digital I/Os.

Application examples

Using one computer for VST instruments (not in Cubase LE)

In this example, one computer will be used as main record and playback machine, and another computer as a virtual synth rack.

PROCEDURE

1. Record a MIDI track into computer 1.

2. Once you have finished recording, route the MIDI output of that track to VST System Link MIDI port 1.

3. On computer 2, open up the VST Instruments window and assign an instrument to the first slot in the rack.

4. Route the VST instrument channel to the desired output bus.
   If you are using computer 1 as your main mixing computer, this would be one of the VST System Link output busses, connected to computer 1.

5. Create a new MIDI track in the Project window of computer 2 and assign the MIDI output of the track to the VST instrument you created.

6. Assign the MIDI input of the track to be VST System Link port 1.
   Now, the MIDI track on computer 1 is routed to the MIDI track on computer 2, which in turn is routed to the VST instrument.

7. Now activate monitoring for the MIDI track on computer 2, so that it will listen and respond to any MIDI commands coming in.
   In Cubase, click the Monitor button in the track list or Inspector.

8. Start playback on computer 1.
   It will now send the MIDI information on the track to the VST instrument loaded on computer 2.

RESULT

Even with a slow computer you should be able to stack a whole bunch of extra VST instruments this way, expanding your sound palette considerably. Do not forget that VST System Link MIDI is also sample-accurate, and thus has much tighter timing than any hardware MIDI interface ever invented!

Creating a virtual effect rack

The effect sends for an audio channel in Cubase can either be routed to an FX channel track or to any activated group or output bus. This allows you to use a separate computer as a "virtual effect rack".

PROCEDURE

1. On computer 2 (the machine you will use as effect rack), add a new stereo audio track.
   You cannot use an FX channel track in this case, since the track must have an audio input.

2.   Add the desired effect as an insert effect for the track.

Let's say you add a high-quality reverb plug-in.

3.   In the Inspector, select one of the VST System Link busses as input for the audio track.

You want to use a separate VST System Link bus, which will only be used for this purpose.

4.   Route the channel to the desired output bus.

If you are using computer 1 as your main mixing computer, this would be one of the VST System Link output busses, connected to computer 1.

5.   Activate monitoring for the track.

6.   Go back to computer 1 and select a track to which you want to add some reverb.

7.   Bring up the effect sends for the track in the Inspector or the MixConsole.

8.   Open the Send Routing pop-up menu for one of the sends and select the VST System Link bus assigned to the reverb in step 3.

9.   Use the Send slider to adjust the amount of effect as usual.

RESULT

The signal will be sent to the track on computer 2 and processed through its insert effect, without using any processor power on computer 1.

You can repeat the steps above to add more effects to the "virtual effect rack". The number of effects available this way is only limited by the number of ports used in the VST System Link connection (and of course by the performance of computer 2, but given that it will not have to handle any recording or playback, you should be able to use quite a lot of effects).

Getting extra audio tracks

All computers on a VST System Link network are locked with sample-accuracy. Therefore, if you find that the hard drive on one computer is not fast enough to run as many audio tracks as you need, you can record new tracks on one of the other computers instead. This would create a "virtual RAID system", with several disks all operating together. All tracks will remain locked together just as tightly as if they were all running on the same machine. This means that you effectively have an unlimited track count! Need another 100 tracks? Just add another computer.

Dedicated Video Playback

Playback of high-resolution video can be taxing on a system's CPU. By dedicating one computer for video playback via System Link, you can free up resources on your main CPU for audio and MIDI processing. Since all transport commands will respond on the VST System Link computers, scrubbing video is possible even when it is coming from another computer.

Video

Cubase supports the integration of video files in your project.

You can play back video files in various formats and via different output devices from within Cubase, edit your music to the video, extract the audio material from a video file, and replace the audio later with different audio material.

Before You Start

When working on a project involving a video file, you first need to set up your system according to your equipment and your demands.

The following sections provide some general information about video file formats, frame rates, and video output devices.

Video File Compatibility

Because there are many types of video files, it can be difficult to determine if one will work on your system.

There are two ways to figure out if Cubase can play back a certain video file:

- Open the video file with QuickTime 7.1 or higher, because Cubase uses QuickTime for playing back video files.

- Check the file information of a video file in the Pool. If the information reads "Invalid or not supported file!", the video file is either corrupt or the format is not supported by the available codecs.

NOTE

If you are not able to load a certain video file, you must use an external application to convert the file into a compatible format or install the required codec.

RELATED LINKS

Video Container Formats

Video and other multi-media files come in a container format.

This container holds various streams of information including video and audio, but also metadata such as synchronization information required to play back audio and video together. Data regarding creation dates, authors, chapter markings, and more can also be held within the container format.

The following container formats are supported by Cubase:

Format	Description
MOV	This is a QuickTime movie.
QT	This is also a QuickTime movie, but it is only used on Windows systems.
MPEG-1	This is the first standard of the Moving Picture Experts Group for video and audio compression, used for making video CDs. Files of this container format can have the extensions ".mpg" or ".mpeg".
MPEG-4	This format is based on the QuickTime movie standard, can contain various metadata for streaming, editing, local playback, and interchange of content. Its file extension is ".mp4".
AVI	This format is a multimedia container format introduced by Microsoft.
DV	This is a video format used by camcorders.

Cubase supports all these container formats, but problems may arise when the computer does not have the correct software to decode compressed video and audio streams within the container file. You must also know the type of codec that was used to create the video file.

Codecs

Codecs are methods of data compression used to make video (and audio) files smaller and more manageable for computers.

In order to play back a video file, your computer must have the correct codec installed in the operating system to decode the video stream.

IMPORTANT

The names of codecs and container formats can be confusing. Because many container formats have the same names as the codecs they use within the file, make sure to differentiate the container format or file type, for example .mov or .dv, from the codec used within it.

If you are not able to load a certain video file, the required codec is probably not installed on your computer. In this case, you can search the internet (e.g. the Microsoft or Apple web sites) for video codecs.

Frame Rates

Cubase is capable of working with different types of video and film frame rates.

Video Output Devices

Cubase supports several ways to play back video files.

Viewing video files onscreen in the Video Player window may work just fine for many applications, but often it is necessary to display video in a large format for viewing small details and so others involved in the session can also see the video. Cubase provides the ability to use several types of video output devices to accomplish this.

Multi-Head Video Cards

One of the most common methods is the use of a multi-head video card installed in the computer.

Multi-head video cards allow you to connect more than one computer monitor to the card, in some cases up to four. If you direct the video output of Cubase to one of these outputs, the video file is displayed in full screen mode on a computer monitor or HD television screen.

NOTE

You can also use more than one video card to achieve the same result.

Different video cards support different types of outputs including standard VGA, DVI, S-Video, HDMI, and component video. These options allow you to choose the type of monitor you use for video. HD televisions and digital projectors provide the largest viewing screens, but a normal computer monitor can function as a very high-quality video monitor as well.

Dedicated Video Cards

The use of a dedicated video card is also supported in Cubase.

These cards are normally used in video editing systems to capture video to disk and display it while editing. They usually have a high resolution and take some strain off the host CPU by providing video compression and decompression processing on the card.

NOTE

The Decklink cards by Blackmagic Design are automatically recognized by Cubase. Video will be sent directly to its output.

FireWire DV Output

You have the option to use FireWire ports on the computer to output DV video streams to external converters such as various camcorders and standalone FireWire to DV conversion units.

These units can be connected to a television or projector for large format viewing. The FireWire protocol is capable of transporting data at high speed and is the most common standard for communicating with video-related peripheral equipment.

IMPORTANT

On Windows systems, it is important that you connect your device to the FireWire port before launching Cubase. Otherwise it may not be detected properly by Cubase.

Preparing a Video Project

The following sections describe the basic operations necessary for preparing a Cubase project involving video.

It is advisable to save your video files on a separate hard drive from your audio files. This can help prevent data streaming problems when using high-resolution video with many audio tracks.

Importing Video Files

Importing a video file into your project is very straight forward once you know that you have a compatible video file.

Video files are imported in the same manner as audio files:

- By using the File menu (Import–Video File).

  In the Import Video dialog, you can activate the "Extract Audio From Video" option. This imports any embedded audio streams to a newly created audio track positioned below the video track. The new track and the clip will get the name of the video file. The new audio event will start at the same time as the video event, so that they are in sync with each other.

  NOTE

  If you try to import a non-supported video file with the Import Video option, the Import Video dialog displays the text "Invalid or not supported file!".

- By importing to the Pool first and then dragging to the Project window.

- By using drag and drop from the MediaBay, the Pool, the Windows Explorer, or the Mac OS Finder.

When importing video files via the Pool or by using drag and drop, Cubase can automatically extract the audio from a video file. Whether this happens, depends on the "Extract Audio on Import Video File" setting in the Preferences dialog (Video page).

When importing video, Cubase automatically creates a thumbnail cache file. The generated file is stored in the same folder as the video file and gets the name of the file with the suffix ".vcache".

IMPORTANT

In Cubase, you may work with multiple video files of differing frame rates and formats on the same video track. Assuming you have the proper codecs installed, all video files can be played back in one project, but note that proper synchronization of audio and video events is ensured only if the frame rate of the video file matches the project frame rate.

RELATED LINKS

Adopting the Frame Rate

When using video files within Cubase, it is important to adjust the project's frame rate to that of the imported video. This ensures that the time displays of Cubase correspond to the actual frames in the video. If the frame rate of an imported video file differs from the frame rate set for the project, the video event shows a warning.
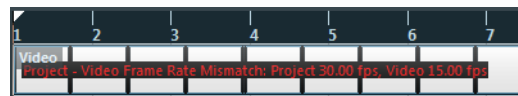
In order to match the two frame rates, you have to adjust the frame rate in the Project Setup dialog.

PROCEDURE

1. Open the Project menu and select "Project Setup...".

2. In the Project Setup dialog, click the "Get From Video" button.

   Provided that the video file has a frame rate supported by Cubase, it is automatically detected and applied to the project. If the project contains several video files with different frame rates, the project frame rate is adjusted to the frame rate of the first video event on the upper video track.

RESULT

The project frame rate setting will change to that of the video file and the project start time will be altered to reflect the change in frame rate if needed.

For example, when the project frame rate is switched from 30 fps to 29.97 fps, the start time is changed so that all the events currently in the project remain at the same positions in relation to realtime. If you want the project start time to remain the same, you must manually change it back after clicking the "Get From Video" button. In this case, it is important that the video event is snapped to the timeline to ensure proper positioning and synchronization within the project.

NOTE

- Cubase can only detect the supported frame rates (these are the frame rates listed in the Frame Rate pop-up menu in the Project Setup dialog). Video files with non-supported frame rates can be played back, but the time displays are not correct in this case and proper positioning is not guaranteed. Furthermore, audio and video may not be in sync. Therefore, we recommend that you use an external application to convert the video file to a frame rate supported by Cubase.

- If you have more than one video file in a project, it is advisable that all video files have the same frame rate consistent with the project frame rate. Nevertheless, you can work with multiple video files of differing frame rates, but in this case you should always change the project frame rate to the frame rate of the video file that you are editing at the moment. This is done in the Project Setup dialog by selecting the correct frame rate from the Frame Rate pop-up menu.

About Thumbnails

The individual thumbnail images are positioned exactly at the beginning of the corresponding frame.

When you zoom in and there is enough space between the frames, the thumbnail is repeated as many times as there is free space available. Thus, you can always see a thumbnail regardless of how much you zoom in.

Thumbnail Memory Cache Size

In the Preferences dialog on the Video page, you can enter a value for the "Thumbnail Memory Cache Size". This determines how much memory is available for displaying "real" thumbnails. The currently shown image is buffered in the thumbnail memory cache. Whenever you move to another image and there is no memory capacity left, the "oldest" picture in the cache is replaced by the current one. If you have long video clips and/or work with a large zoom factor, you may have to raise the "Thumbnail Memory Cache Size" value.

About thumbnail cache files

When importing video, Cubase automatically creates a thumbnail cache file. The cache file is used in situations where the processor load is very high and the correct redrawing or realtime calculation of thumbnails might use system resources necessary for editing or processing. When you zoom in on the thumbnails, you see

that they are in a lower resolution, i.e. the pictures are not as clear as when they are calculated. When the processes that rely heavily on the computer CPU are finished, the frames are automatically recalculated, i. e. the program automatically switches between realtime calculation of the pictures and using the cache file.

NOTE

There are situations where no thumbnail cache file can be generated, e.g. if you import a video file from a folder that is write-protected. If you have access to the host folder at a later stage, you can generate a thumbnail cache file manually.

Manually Generating Thumbnail Cache Files

If no thumbnail cache file could be generated during import or if you have to "refresh" a thumbnail cache file of a certain video file, because the file has been edited with an external video editing application, you have the possibility to generate the thumbnail cache file manually.

To create a thumbnail cache file manually, you have the following possibilities:

- In the Pool, right-click on the video file that you want to create a thumbnail cache file for and select the "Generate Thumbnail Cache" option from the context menu.

  A thumbnail cache file is created, or, in case there already existed a thumbnail cache file for the video file, it is "refreshed".

- In the Project window, open the context menu for the video event, and select "Generate Thumbnail Cache" from the Media submenu.

- Open the Media Menu and select "Generate Thumbnail Cache".

NOTE

- "Refreshing" an already existing thumbnail cache file can be done only from within the Pool.

- The thumbnail cache file is generated in the background so that you can continue working with Cubase.

Playing Back Video

Video is played back together with all other audio and MIDI material, using the Transport controls.

IMPORTANT

- For playing back video files, you must have QuickTime 7.1 or higher installed on your computer. There is a freeware version and a "pro" version, which offers additional video conversion options. The player engine is the same in both versions, so for mere playback in Cubase there is no need to purchase the "pro" version.

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- You need a video card that supports OpenGL (version 2.0 recommended) for proper video playback. A card with OpenGL 1.2 can also be used, but might put restrictions on the video functionality.

To check if your video equipment is capable of playing back a video from within Cubase, open the Video Player page in the Device Setup dialog. If your system does not meet the minimum video requirements, a corresponding message will be displayed.

Device Setup

In the Device Setup dialog you determine which device is used for playing back video files.
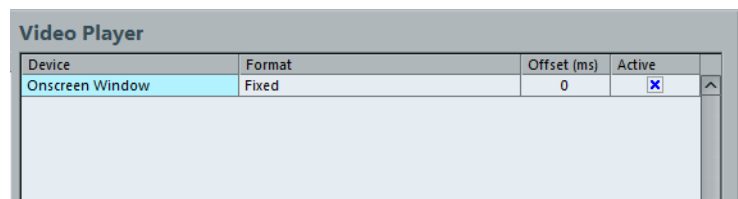
The Video Player page in the Device Setup dialog

You can switch between different output devices during playback.

Setting Up a Video Output Device

PROCEDURE

1. Open the Devices Menu and select "Device Setup…" to open the Device Setup dialog, and select the Video Player page.

2. In the Active column, activate the checkbox for the device that you want to use for playing back video.

    All devices in your system that are capable of playing back video are listed. The Onscreen Window device serves for playing back the video file on your computer monitor.

3. From the pop-up menu in the Format column, select an output format.

    For the Onscreen Window output, only a "fixed" format is available. For the other output devices, you can select different output formats for playback depending on the device.

4. Adjust the Offset setting to compensate for processing delays.

    Due to delays while processing video, the video image may not match with the audio in Cubase. By using the Offset parameter, you can compensate for this effect. The Offset value indicates how many milliseconds the video will be delivered earlier in order to compensate for the processing time of the video material. Each hardware setup can have different processing delays, so you must try out different values to determine which value is appropriate.

    NOTE

    - The Offset value can be set individually for each output device. It is saved globally for each output device and is independent of the project.

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▪ The offset is only used during playback. It is defeated in stop and scrub mode so that you always see the correct video frame.

AFTER COMPLETING THIS TASK

If the quality of the video image is not a critical factor or if you are experiencing performance problems, try lowering the value on the Video Quality pop-up menu. Although higher quality settings make the video display sharper and smoother, they also lead to an increased processor load.

RELATED LINKS

Improving Video Performance

Sometimes, video problems, such as stutters during playback, are caused by codecs that do not support multi-threading. This can be the case for video files that use single-threaded decoding, such as Motion-JPEG, Photo-JPEG, and QuickTime DV codecs. These types of video files are typically created when capturing video with Decklink/AJA cards.

To compensate for this, you can activate the "Boost Video (Reduces Audio Performance)" option on the Video Player page in the Device Setup dialog. This excludes one of the available CPU cores from audio processing and reserves it for video tasks like decoding and playback. However, this may reduce the audio performance.

NOTE

For this option to have an effect, you must also activate the Multi Processing option in the Device Setup dialog (VST Audio System page).

Video Player

The Video Player window is used for playing back video on your computer screen.

▪ To open the Video Player window, open the Devices menu and select the "Video Player" option.

Setting the Window Size and Video Quality

To resize the Video Player window and/or change the playback quality of the video, select the appropriate option on the context menu of the Video Player window.

Fullscreen Mode

The window is enlarged to occupy the whole (computer) screen. If you are working with more than one monitor, you can move the Video Player window to an extra monitor. Thus, you can work with Cubase on one monitor and let the video play back on another monitor. You can exit full screen mode via the window's context menu or by pressing [Esc] on your computer keyboard.

Quarter Size

The window size is reduced to a quarter of the actual size.

Half Size

The window size is reduced to half the actual size.

Actual Size

The window size corresponds to the size of the video.

Double Size

The window is enlarged to twice the actual size.

Video Quality

This submenu allows you to change the quality of the video image.

NOTE

- To resize the Video Player window, you can also drag the borders.

- The higher the resolution, the more processing power is needed for playback. If you need to reduce the processor load, you can reduce the size of the Video Player window, or lower the value on the Video Quality submenu.

Setting the Aspect Ratio

Resizing the Video Player window by dragging its borders may lead to a distorted image. To prevent this, you can set an aspect ratio for video playback.

From the Aspect Ratio submenu of the Video Player context menu, select one of the following options:

None

The aspect ratio of the video is not kept when resizing the window. The image is enlarged/reduced to occupy the whole Video Player window.

Internal

The Video Player window can be resized at will, but the aspect ratio of the video is kept and black borders are displayed around the video image to fill the window.

External

The resizing of the Video Player window is limited according to the aspect ratio of the video image, i. e. the video image always fills the full window and its aspect ratio is kept.

NOTE

When the video is played back in full screen mode, the aspect ratio of the video is always kept.

Scrubbing Video

You can scrub video events, i.e. play them back forwards or backwards at any speed. This is done by clicking in the Video Player window and moving the mouse to the left or to the right. You can also use the Scrub controls on the Transport panel or a jog wheel on a remote controller for scrubbing video events.

RELATED LINKS

Project Scrubbing - The Jog Wheel on page 132
Playing Back with the Shuttle Speed Wheel on page 132

Editing Video

Video clips are played back by events just as audio clips are.

You can use all the basic editing operations on video events, just as with audio events. You can take a single event and copy it many times for the creation of mix variations. A video event may also be trimmed using the event handles to remove a countdown for instance. Furthermore, you can edit video clips in the Pool.

It is not possible to fade or crossfade video events. Furthermore, you cannot use the Draw, Glue, and Mute tools with a video event.

NOTE

Windows only: If you find that you are unable to edit a video file copied from a CD, this might be due to the fact that files copied from CD are write-protected by default. To remove the write-protection, in the Windows Explorer, open the Properties dialog and deactivate the "Read-Only" option.

RELATED LINKS

Pool on page 313

Extracting Audio From a Video File

If a video file contains audio, the audio stream can be extracted.

As always when importing audio material, a dialog is displayed allowing you to select different import options.

There are several ways to extract audio from a video file:

- By activating the "Extract Audio From Video" option in the Import Video dialog.

- By using the "Audio from Video File" option on the Import submenu of the File menu.

  This will insert an audio event starting at the project cursor position on the selected audio track. If no audio track is selected, a new one will be created.

- By activating the "Extract Audio on Import Video File" option in the Preferences dialog (Video page).

  This will automatically extract the audio stream from any video file during import.

- By using the "Extract Audio from Video File" option on the Media menu.

  This creates an audio clip in the Pool, but does not add any events to the Project window.

IMPORTANT

These functions are not available for MPEG-1 video files.

RELATED LINKS

Replacing the Audio in a Video File

Once you have edited all audio and MIDI data to the video and created a final mix, you will need to put the new audio back with the video. You can do this by embedding the audio in another stream within the video container file.

PROCEDURE

1. Place the left locator at the start of the video file in Cubase. This will ensure that your audio and video streams are synchronized.

2. Open the File menu and select the Audio Mixdown option from the Export submenu to export the audio file you wish to insert into the video container file.

3. From the File menu, select "Replace Audio in Video File…".

   A file dialog opens prompting you to locate the video file.

4. Select the video file and click Open.

   Next, you are prompted to locate the corresponding audio file.

5. Select the audio file and click Open.

   The audio is added to the video file, replacing its current audio stream.

AFTER COMPLETING THIS TASK

Once the process is completed, open the video file in a native media player and check for proper synchronization.

RELATED LINKS

ReWire (not in Cubase LE)

Introduction

ReWire is a special protocol for streaming audio between two computer applications.

Developed by Propellerhead Software and Steinberg, ReWire provides the following possibilities and features:

- Realtime streaming of up to 48 separate audio channels, at full bandwidth, from the "synthesizer application" into the "mixer application".

  In this case, the "mixer application" is of course Cubase. An example of a "synthesizer application" is Propellerhead Software's Reason.

- Automatic, sample accurate synchronization between the audio in the two programs.

- The possibility to have the two programs share one audio card and take advantage of multiple outputs on that card.

- Linked transport controls that allow you to play, rewind, etc., either from Cubase or from the synthesizer application (provided it has some kind of transport functionality).

- Automatic audio mixing functions of separate channels as required.

  In the case of Reason, for example, this allows you to have separate channels for the different devices.

- Additionally, ReWire offers the possibility to route MIDI tracks in Cubase to the other application, for full MIDI control.

  For each ReWire compatible device, a number of extra MIDI outputs will be made available in Cubase. In the case of Reason, this allows you to route different MIDI tracks in Cubase to different devices in Reason, with Cubase serving as the main MIDI sequencer.

- The overall load on your system is much reduced, compared to when using the programs together in the conventional way.

Launching and quitting

When using ReWire, the order in which you launch and quit the two programs is very important.

Launching for normal use with ReWire

PROCEDURE

1.   First launch Cubase.

2.   Enable one or several ReWire channels in the ReWire Device dialog for the other application.

3.   Launch the other application.

      It may take slightly longer for the application to start when you are using ReWire.

RELATED LINKS
Activating ReWire channels on page 599

Quitting a ReWire session

When you are finished, you also need to quit the applications in a special order.

PROCEDURE

1.   First quit the synthesizer application.

2.   Then quit Cubase.

Launching both programs without using ReWire

We cannot think of any scenario, in which you would need to run Cubase and the synthesizer application simultaneously on the same computer, without using ReWire, but you can.

PROCEDURE

1.   First launch the synthesizer application.

2.   Then launch Cubase.

NOTE

Please note that the two programs now compete for system resources such as audio cards, just as when running either with other, non-ReWire audio applications.

Activating ReWire channels

ReWire supports streaming of up to 48 separate audio channels. The exact number of available ReWire channels depends on the synthesizer application. Using the ReWire Device panels in Cubase, you can specify which of the available channels you want to use.

PROCEDURE

1. Open the Devices menu and select the menu item with the name of the ReWire application. All recognized ReWire compatible applications will be available on the menu.

    The ReWire panel appears. This consists of a number of rows, one for each available ReWire channel.

2. Click on the power buttons to the left to activate/deactivate the desired channels.

    The buttons light up to indicate activated channels. Please note that the more ReWire channels you activate, the more processing power is required.

    For information about exactly what signal is carried on each channel, see the documentation of the synthesizer application.

3. If desired, double-click on the labels in the right column, and type in another name.

    These labels will be used in the Cubase MixConsole to identify the ReWire channels.

Using the transport and tempo controls

IMPORTANT

This is only relevant if the synthesizer application has some sort of built-in sequencer or similar.

Basic transport controls

When you run ReWire, the transports in the two programs are completely linked. It does not matter in which program you play, stop, fast forward or rewind. However, recording (if applicable) is still completely separate in the two applications.

Loop settings

If there is a loop or cycle facility in the synthesizer application, that loop will be completely linked to the cycle in Cubase. This means that you can move the start and end point for the loop or turn the loop on or off in either program, and this will be reflected in the other.

Tempo settings

As far as tempo goes, Cubase is always the master. This means that both programs will run in the tempo set in Cubase.

However, if you are not using the tempo track in Cubase, you can adjust the tempo in either program, and this will immediately be reflected in the other.

IMPORTANT

If you are using the tempo track in Cubase (i.e. the Tempo button is activated on the Transport panel), you should not adjust the tempo in the synthesizer application, since a tempo request from ReWire will automatically deactivate the tempo track in Cubase!

How the ReWire channels are handled

When you activate ReWire channels in the ReWire Device panels, they will become available as channels in the MixConsole.

The ReWire channels have the following properties:

- ReWire channels may be any combination of mono and stereo, depending on the synthesizer application.

- ReWire channels have the same functionality as regular audio channels.

  This means you can set volume and pan, add EQ, insert effects and sends, and route the channel outputs to groups or busses. However, ReWire channels have no monitor buttons.

- All channel settings can be automated using the Read/Write buttons.

  When you write automation, channel automation tracks will automatically appear in the Project window. This allows you to view and edit the automation graphically, just as with VST instrument channels, etc.

- You can mix down the audio from ReWire channels to a file on your hard disk with the Export Audio Mixdown function.

  You can export the output bus to which you have routed the ReWire channels. You can also export individual ReWire channels directly – "rendering" each ReWire channel to a separate audio file.

RELATED LINKS
Mixing down to audio files on page 551

Routing MIDI via ReWire

When using Cubase with a ReWire-compatible application, additional MIDI outputs will automatically appear on the MIDI Output pop-up menus for MIDI tracks. This allows you to play the synthesizer application via MIDI from Cubase, using it as one or several separate MIDI sound sources.

The MIDI outputs for a Reason song. Here, each output goes directly to a device in the Reason rack.

▪ The number and configuration of MIDI outputs depends on the synthesizer application.

Considerations and limitations

Sample rates

Synthesizer applications may be limited to audio playback in certain sample rates. If Cubase is set to a sample rate other than those, the synthesizer application will play back at the wrong pitch. Consult the documentation of the synthesizer application for details.

ASIO drivers

ReWire works well with ASIO drivers. By using the Cubase bus system you can route sounds from the synthesizer application to various outputs on an ASIO compatible audio card.

Key Commands

Introduction

Most of the main menus in Cubase have key command shortcuts for certain items on the menus. In addition, there are numerous other Cubase functions that can be performed via key commands. These are all default settings.

You can customize existing key commands to your liking, and also add commands for many menu items and functions that currently have no key command assigned.

You can find out for which functions key commands can be assigned by looking in the Key commands dialog (see below), or by checking the tooltip for a particular interface element. If a tooltip shows [!] at the end, you can assign a key command to this function. Assigned key commands are shown in the tooltips in square brackets.
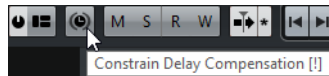
IMPORTANT

You can also assign tool modifier keys, i.e. keys that change the behavior of various tools when pressed. This is done in the Preferences dialog.

RELATED LINKS
Setting up tool modifier keys on page 607

How are key commands settings saved?

Every time you edit or add any key command assignment, this is stored as a global Cubase preference – not as part of a project. If you edit or add a key command assignment, any subsequent projects that you create or open will use these modified settings. However, the default settings can be restored at any time by clicking the Reset All button in the Key Commands dialog.

In addition, you can save key commands settings as a "key commands file", which is stored separately and can be imported into any project. This way you can quickly and easily recall customized settings, when moving projects between different computers, for example. The settings are saved in an XML file on the hard disk.

RELATED LINKS
Saving key commands presets on page 605

Setting up key commands

Adding or modifying a key command

In the Key Commands dialog you will find all main menu items and a large number of other functions, arranged in a hierarchical way similar to the Windows Explorer and Mac OS Finder. The function categories are represented by a number of folders, each containing various menu items and functions.

When you open a category folder by clicking the "+" sign beside it, the items and functions it contains are displayed with the currently assigned key commands.
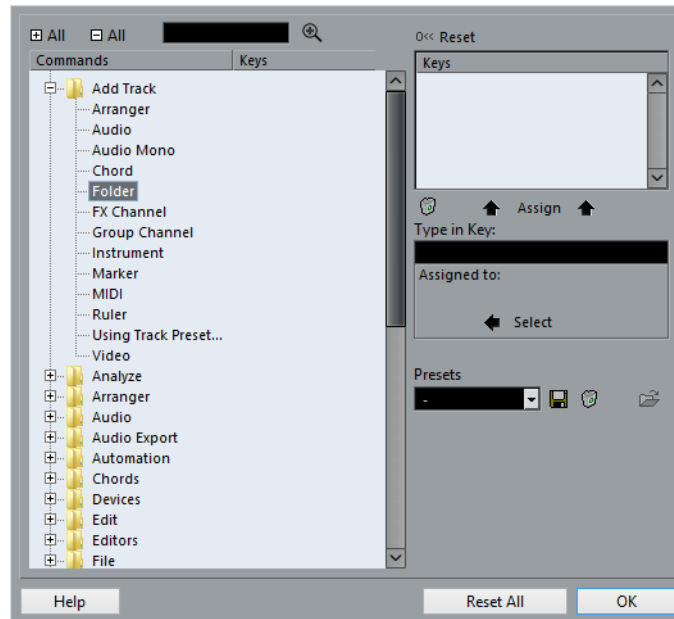
To add a key command, proceed as follows:

PROCEDURE

1. Open the File menu and select "Key Commands…".
    The Key Commands dialog opens.

2. In the Commands list on the left, choose a category.

3. Click the "+" sign to open the category folder and display the items it contains.
    Note that you can also click the "global" "+" and "-" signs in the top left corner to open and close all category folders at once.

4. In the list, select the item to which you want to assign a key command.
    Already assigned key commands are shown in the Keys column as well as in the Keys section in the top right corner.
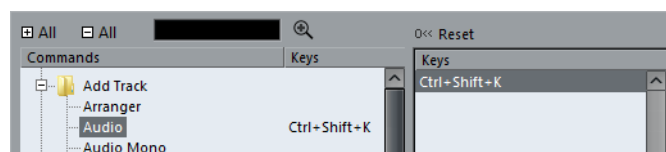
5. Alternatively, you can use the search function in the dialog to find the desired item.

    For a description of how to use the search function, see below.

6. When you have found and selected the desired item, click in the "Type in Key" field and enter a new key command.

    You can choose any single key or a combination of one or several modifier keys ([Alt]/[Option], [Ctrl]/[Command], [Shift]) plus any key. Just press the keys you want to use.

7. If the key command you enter is already assigned to another item or function, this is displayed below the "Type in Key" field.

    You can either ignore this and proceed to assign the key command to the new function instead, or you can select another key command.

8. Click the Assign button above the field.

    The new key command appears in the Keys List.

    IMPORTANT

    If the key command you enter is already assigned to another function, you will get a warning message asking if you really want to reassign the command to the new function.

9. Click OK to exit the dialog.

    NOTE

    You can set up several different key commands for the same function. Adding a key command to a function that already has another key command will not replace the key command previously defined for the function. If you wish to remove a key command, see below.

Searching for key commands

If you want to know which key command is assigned to a certain function in the program, you can use the Search function in the Key Commands dialog.

PROCEDURE

1. Click in the search text field at the top left of the dialog and type in the function for which you want to know the key command.

    This is a standard word search function, so you should type the command as it is spelled in the program. Partial words can be used; to search for all quantize related commands, type "Quantize", "Quant", etc.

2. Click the Search button (the magnifying glass icon).

    The search is conducted and the first matching command is selected and displayed in the Commands list below. The Keys column and the Keys list show the assigned key commands, if any.

3. To search for more commands containing the word(s) you entered, click the Search button again.

4. When you are done, click OK to close the dialog.

Removing a key command

PROCEDURE

1. Use the list of categories and commands to select the item or function for which you wish to remove a key command.

    The key command is shown in the Keys column and the Keys list.

2. Select the key command in the Keys list and click the Delete button (the trash icon).

    You are asked whether you really want to remove the key command.

3. Click Remove to remove the selected key command.

4. Click OK to close the dialog.

Saving key commands presets

As mentioned above, any changes made to the key commands are automatically stored as a Cubase preference. However, it is also possible to save key commands settings separately. This way, you can save any number of different key command settings as presets for instant recall.

PROCEDURE

1. Set up the key commands to your liking.

    When setting up key commands, remember to click "Assign" to make the changes.

2. Click the Save button next to the Presets pop-up menu.

    A dialog opens, allowing you to type in a name for the preset.

3. Click OK to save the preset.

    Your saved key commands settings are now available on the Presets pop-up menu.

Loading key command presets

To load a key command preset, simply select it from the Presets pop-up menu.

NOTE

The key command settings you load will replace the current key command settings for the same functions (if any). If you have macros of the same name as those stored in the preset you load, these will be replaced too. If you want to be able to revert to your current settings again, make sure to save them first, as described above!

Loading earlier key commands settings

If you have saved key commands settings with an earlier program version, it is possible to use them in this Cubase version, by using the "Import Key Command File" function, which lets you load and apply saved key commands.

PROCEDURE

1. Open the Key Commands dialog.

2. Click the "Import Key Command File" button to the right of the Presets pop-up menu.
   A standard file dialog opens.
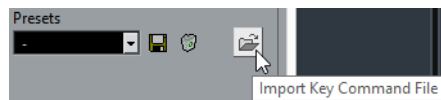
3. In the file dialog, use the "Files of type" pop-up menu to specify if you want to import a key commands file (".key") or a macro commands file (extension ".mac").
   When you have imported an older file, you might want to save it as a preset (see above) to be able to access it from the Presets pop-up menu in the future.

4. Navigate to the file you want to import and click "Open".
   The file is imported.

5. Click OK to exit the Key Commands dialog and apply the imported settings.
   The settings in the loaded key commands file or macros file now replace the current settings.

About the Reset and Reset All functions

These two buttons in the Key Commands dialog will both restore the default settings. The following rules apply:

- "Reset" will restore the default key command setting for the function selected in the Commands list.

- "Reset All" will restore the default key commands for all commands.

IMPORTANT

Note that the "Reset All" operation will cause any changes made to the default key commands to be lost! If you want to be able to revert to these settings again, make sure to save them first!

Setting up tool modifier keys

A tool modifier key is a key you can press to get an alternate function when using a tool. For example, clicking and dragging an event with the Object Selection tool normally moves it – holding down a modifier key (by default [Alt]/[Option]) while dragging will copy it instead.

The default assignments for tool modifier keys can be found in the Preferences dialog (Editing–Tool Modifiers page). Here, you can also edit them:

PROCEDURE

1. Open the Preferences dialog and select the Editing–Tool Modifiers page.
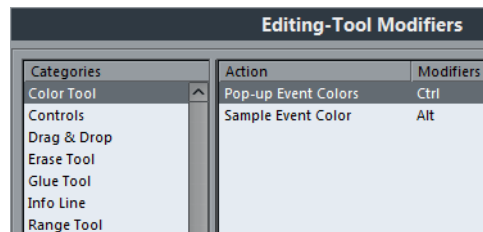
2. Select an option in the Categories list, and locate the action for which you want to edit the modifier key.

    For example, the "Copy" action mentioned above resides in the category "Drag & Drop".

3. Select the action in the Action list.

4. Hold down the desired modifier key(s) and click the Assign button.

    The current modifier keys for the action are replaced. If the modifier keys you pressed are already assigned to another tool, you will be asked whether you want to overwrite them. If you do, this will leave the other tool without any modifier keys assigned.

5. When you are done, click OK to apply the changes and close the dialog.

The default key commands

Below, the default key commands are listed according to category.

NOTE

When the Virtual Keyboard is displayed, the usual key commands are blocked because they are reserved for the Virtual Keyboard. The only exceptions are: [Ctrl]/[Command]-[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]/[Option]-[K] (Show/Hide Virtual Keyboard).

Audio category

Option	Key command
Adjust Fades to Range	[A]
Crossfade	[X]

Automation category

Option	Key command
Read Automation for All Tracks On/Off	[Alt]/[Option]-[R]
Write Automation for All Tracks On/Off	[Alt]/[Option]-[W]

Chords

Option	Key command
Chord Pads	[Ctrl]/[Command]-[Shift]-[C]

Devices category

Option	Key command
MixConsole	[F3]
Video	[F8]
Virtual Keyboard	[Alt]/[Option]-[K]
VST Connections	[F4]
VST Instruments (not in Cubase LE)	[F11]
VST Performance	[F12]

Edit category

Option	Key command
Activate/Deactivate Focused Object	[Alt]/[Option]-A
Auto-Scroll On/Off	[F]
Copy	[Ctrl]/[Command]-[C]
Cut	[Ctrl]/[Command]-[X]
Cut Time	[Ctrl]/[Command]-[Shift]-[X]
Delete	[Delete] or [Backspace]
Delete Time	[Shift]-[Backspace]
Duplicate	[Ctrl]/[Command]-[D]
Expand/Reduce	[Alt]/[Option]-E

Option	Key command
Insert Silence	[Ctrl]/[Command]-[Shift]-[E]
Invert	[Alt]/[Option]-F
Left Selection Side to Cursor	[E]
Move to Cursor	[Ctrl]/[Command]-[L]
Move to Front (Uncover)	[U]
Mute	[M]
Mute Events	[Shift]-[M]
Mute/Unmute Objects	[Alt]/[Option]-[M]
Open Default Editor	[Ctrl]/[Command]-[E]
Open Score Editor	[Ctrl]/[Command]-[R]
Open/Close Editor	[Return]
Paste	[Ctrl]/[Command]-[V]
Paste at Origin	[Alt]/[Option]-[V]
Paste Relative to Cursor	[Shift]-[V]
Paste Time	[Ctrl]/[Command]-[Shift]-[V]
Primary Parameter: Decrease	[Ctrl]/[Command]-[Shift]-[Down Arrow]
Primary Parameter: Increase	[Ctrl]/[Command]-[Shift]-[Up Arrow]
Record Enable	[R]
Redo	[Ctrl]/[Command]-[Shift]-[Z]
Repeat	[Ctrl]/[Command]-[K]
Right Selection Side to Cursor	[D]
Secondary Parameter: Decrease	[Ctrl]/[Command]-[Shift]-[Left Arrow]
Secondary Parameter: Increase	[Ctrl]/[Command]-[Shift]-[Right Arrow]
Select All	[Ctrl]/[Command]-[A]
Select None	[Ctrl]/[Command]-[Shift]-[A]
Snap On/Off	[J]
Solo	[S]
Split At Cursor	[Alt]/[Option]-[X]
Split Range	[Shift]-[X]
Undo	[Ctrl]/[Command]-[Z]
Unmute Events	[Shift]-[U]
Write	[W]

Editors category

Option	Key command
Show/Hide Editors	[Ctrl]/[Command]-[Alt]/[Option]-[E]
Show/Hide Info Line	[Ctrl]/[Command]-[I]
Show/Hide Inspector	[Alt]/[Option]-[I]
Show/Hide Overview	[Alt]/[Option]-[O]
Show/Hide Rack	[Alt]/[Option]-[T]
Toggle Rack Tabs	[Ctrl]/[Command]-[Alt]/[Option]-[T]

File category

Option	Key command
Close	[Ctrl]/[Command]-[W]
New	[Ctrl]/[Command]-[N]
Open	[Ctrl]/[Command]-[O]
Quit	[Ctrl]/[Command]-[Q]
Save	[Ctrl]/[Command]-[S]
Save As	[Ctrl]/[Command]-[Shift]-[S]
Save New Version	[Ctrl]/[Command]-[Alt]/[Option]-[S]

Inspector

Option	Key command
Toggle Inspector Footer Tabs	[Ctrl]/[Command]-[Alt]/[Option]-[Shift]-[T]
Toggle Inspector Tabs	[Ctrl]/[Command]-[Shift]-[T]

Media category

Option	Key command
Open MediaBay	[F5]
Preview Cycle On/Off	[Shift]-Num [/]
Preview Start	[Shift]-[Enter]
Preview Stop	[Shift]-Num [0]
Search MediaBay	[Shift]-[F5]
Toggle Filters	[Ctrl]/[Command]-[Alt]/[Option]-Num [5]

Option	Key command
Toggle Location Tree	[Ctrl]/[Command]-[Alt]/[Option]-Num [4]
Toggle Locations	[Ctrl]/[Command]-[Alt]/[Option]-Num [8]
Toggle Previewer	[Ctrl]/[Command]-[Alt]/[Option]-Num [2]

MIDI category

Option	Key command
Show/Hide Controller Lanes	[Alt]/[Option]-[L]

Navigate category

Option	Key command
Add Down: Expand/Undo selection in the Project window to the bottom/ Move selected event in the Key Editor down 1 octave	[Shift]-[Down Arrow]
Add Left: Expand/Undo selection in the Project window/Key Editor to the left	[Shift]-[Left Arrow]
Add Right: Expand/Undo selection in the Project window/Key Editor to the right	[Shift]-[Right Arrow]
Add Up: Expand/Undo selection in the Project window to the top/Move selected event in the Key Editor up one octave	[Shift]-[Up Arrow]
Bottom: Select bottom track in the track list	[End]
Down: Select next in the Project window/Move selected event in the Key Editor one semitone down	[Down Arrow]
Left: Select next in the Project window/Key Editor	[Left Arrow]
Right: Select next in the Project window/Key Editor	[Right Arrow]

Option	Key command
Top: Select top track in the track list	[Home]
Toggle Selection	[Ctrl]/[Command]-[Space]
Up: Select next in the Project window/ Move selected event in the Key Editor one semitone up	[Up Arrow]

Nudge category

Option	Key command
End Left	[Alt]/[Option]-[Shift]-[Left Arrow]
End Right	[Alt]/[Option]-[Shift]-[Right Arrow]
Left	[Ctrl]/[Command]-[Right Arrow]
Right	[Ctrl]/[Command]-[Right Arrow]
Start Left	[Alt]/[Option]-[Left Arrow]
Start Right	[Alt]/[Option]-[Right Arrow]

Project category

Option	Key command
Open Markers	[Ctrl]/[Command]-[M]
Open Pool	[Ctrl]/[Command]-[P]
Open Tempo Track	[Ctrl]/[Command]-[T]
Remove Selected Tracks	[Shift]-[Delete]
Setup	[Shift]-[S]

Quantize category

Option	Key command
Quantize	[Q]

Tool category

Option	Key command
Draw tool	[8]
Drumstick tool	[0]
Erase tool	[5]
Glue tool	[4]

Option	Key command
Mute tool	[7]
Next Tool	[F10]
Play tool	[9]
Previous Tool	[F9]
Range tool	[2]
Object Selection tool	[1]
Split tool	[3]
Zoom tool	[6]

Transport category

Option	Key command
Auto Punch In	[I]
Auto Punch Out	[O]
Cycle	[÷] (Win)/[/] (Mac)
Exchange Time Formats	[.]
Fast Forward	[Shift]-Num [+]
Fast Rewind	[Shift]-Num [-]
Forward	Num [+]
Input Left Locator	[Shift]-[L]
Input Position	[Shift]-[P]
Input Right Locator	[Shift]-[R]
Insert Marker	[Insert] (Win)
Locate Next Event	[N]
Locate Next Hitpoint	[Alt]/[Option]-[N]
Locate Next Marker	[Shift]-[N]
Locate Previous Event	[B]
Locate Previous Hitpoint	[Alt]/[Option]-[B]
Locate Previous Marker	[Shift]-[B]
Locate Selection	[L]
Locators to Selection	[P]
Loop Selection	[Alt]/[Option]-[P]
Metronome On/Off	[C]
Nudge Cursor Left	[Ctrl]/[Command]-Num [-]
Nudge Cursor Right	[Ctrl]/[Command]-Num [+]
Panel (Transport panel)	[F2]
Play Selection Range	[Alt]/[Option]-[Space]

Option	Key command
Recall Cycle Marker 1 to 9	[Shift]-Num [1] to Num [9]
Record	Num [*]
Retrospective Record	[Shift]-Num [*]
Return to Zero	Num [.] or Num [,] or Num [;]
Rewind	Num [-]
Set Left Locator	[Ctrl]/[Command]-Num [1]
Set Marker 1	[Ctrl]/[Command]-[1]
Set Marker 2	[Ctrl]/[Command]-[2]
Set Marker 3 to 9	[Ctrl]/[Command]-Num [3] to [9] or [Ctrl]/[Command]- [3] to [9]
Set Right Locator	[Ctrl]/[Command]-Num [2]
Start	[Enter]
Start/Stop	[Space]
Stop	Num [0]
To Left Locator	Num [1]
To Marker 1	[Shift]-[1]
To Marker 2	[Shift]-[2]
To Marker 3 to 9	Num [3] to [9] or [Shift]-[3] to [9]
To Right Locator	Num [2]
Use External Sync	[T]

Windows category

Option	Key command
Inline: Key Commands	[Shift]-[F4]
Inline: Settings	[Shift]-[F3]
Inline: View Layout	[Shift]-[F2]

Zoom category

Option	Key command
Zoom Full	[Shift]-[F]
Zoom In	[H]
Zoom In Tracks	[Ctrl]/[Command]-[Down Arrow]
Zoom In Vertically	[Shift]-[H]
Zoom Out	[G]
Zoom Out Tracks	[Ctrl]/[Command]-[Up Arrow]

Option	Key command
Zoom Out Vertically	[Shift]-[G]
Zoom to Event	[Shift]-[E]
Zoom to Selection	[Alt]/[Option]-[S]
Zoom Tracks Exclusive	[Ctrl]/[Command]-[Alt]/[Option]-[Down Arrow]

Option	Key command

File handling

Importing audio

In Cubase audio can be imported in a variety of different formats. For example, you can import tracks from audio CDs, or import audio files saved in different formats (compressed and uncompressed).

RELATED LINKS

Audio file import options

When you are importing audio files, there are a number of options concerning how the files should be treated by Cubase:

- You can choose to copy the file into the Audio folder of the project and have the project make reference to the copied file rather than the original file.

  This helps you keep your project "self-contained".

- You can choose to split stereo and multi-channel files into a number of mono files.

- You can set all files in the project to the same sample rate and sample size (resolution).

Using the "On Import Audio Files" pop-up menu in the Preferences dialog (Editing–Audio page), you can define what Cubase does when importing an audio file. The available options are described in the following.
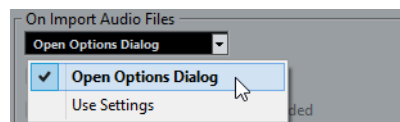
Open Options Dialog

An Options dialog appears when you import, allowing you to select whether you want to copy the files to the Audio folder and/or convert them to the project settings. Please note the following:

- When importing a single file of a format other than the project settings, you can specify which properties (sample rate and/or resolution) are changed.

- When importing multiple files at the same time, you can select to convert the imported files automatically if necessary, i.e. if the sample rate is different than the project's or the resolution is lower than the project setting.

NOTE

When you import 5-channel interleaved files that do not have the speaker arrangement metadata ("BEXT"), Cubase always considers them as 5.0 format.

Use Settings

No Options dialog will appear when you import. Instead, you can select standard actions from the list below the pop-up menu that are performed automatically each time you import audio files:

Copy Files to Working Directory

If files are not already in the project's audio folder, they are copied there before being imported.

Convert and Copy to Project If Needed

If files are not already in the project's audio folder, they are copied there before being imported. Furthermore, if the files have a different sample rate or a lower resolution than the project settings, they are automatically converted.

Importing audio CD tracks

You can import audio from audio CDs into Cubase projects in two ways:

- To import the CD tracks directly into project tracks, choose the "Audio CD…" option from the Import submenu of the File menu.

  The imported audio CD track(s) are inserted on the selected audio track(s) at the project cursor position.

- To import the CD tracks into the Pool, select "Import Audio CD…" from the Media menu.

  This might be the preferred method if you want to import several CD tracks in one go.

Selecting one of the Import Audio CD menu items brings up the following dialog:
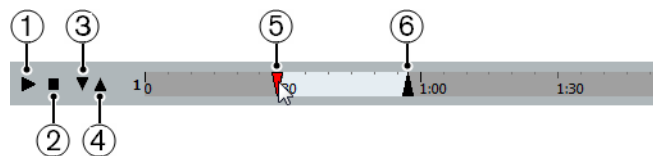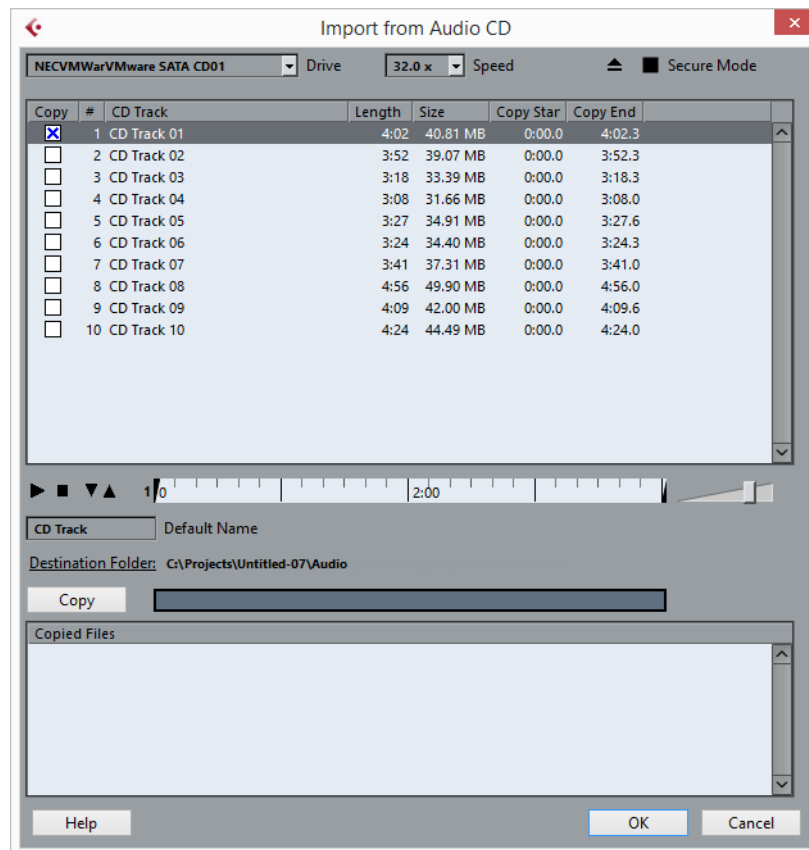
1) Play

2) Stop

3) Play from Left Marker

4) Play to Right Marker

5) Start of selection handle

6) End of selection handle

To import one or more tracks, proceed as follows:

PROCEDURE

1. If you have more than one CD drive, select the correct one from the Drive pop-up menu at the top left.

   On opening the CD, the program tries to retrieve the track names from CDDB (a CD database). If no connection to CDDB can be established or the CD track names are not found, you can manually change the generic track name in the Default Name field.

2. Windows only: Activate the "Secure Mode" option if you want to use a Secure Read mode.

   Use this if you encounter problems when trying to import an audio CD. Error checking and correction will be done during the process. Note that this mode will take more time.

3. In the Windows version, select the data transfer speed from the Speed pop-up menu.

   While you normally want to use the fastest possible speed, you may have to select a slower speed for flawless audio extraction.

4. Activate the Copy checkbox for every audio file you want to import.

   You can also select a copy section for every file, see below.

5. Click on the Copy button to create a local copy of the audio file(s) or section(s).

   The copied files are listed at the bottom of the dialog. By default, imported audio CD tracks will be stored as Wave files (Windows) or AIFF files (Mac) in the Audio folder of the current project. To change the folder, click Destination Folder and select a different folder from the dialog. During copying, the Copy button is labeled "Stop"; click it to stop the process.

6. Click OK to import the copied audio files into the project, or click Cancel to stop the import and discard the copied files.

   If you import more than one audio file into project tracks, a dialog opens in which you have to choose whether to insert the tracks on one track or on different ones.

   The new track(s) are displayed in the Project window. New audio clips are created and added to the Pool.

   The columns in the "Import from Audio CD" dialog have the following functionality:

Column	Description
Copy	Activate the checkbox in this column for the track you want to copy/import. To activate more than one checkbox, click and drag over the checkboxes (or press [Ctrl]/[Command] or [Shift] and click).
#	This is the track number.
CD Track	When you import an audio CD track, the file is named according to this column. The names are pulled automatically from CDDB, if possible. You can rename a track by clicking in the CD Track column and typing a new name. You can also apply a generic name to all audio CD tracks, if no name was available in CDDB.
Length	The length of the audio CD track in minutes and seconds.
Size	The file size of the audio CD track in MB.
Copy Start	You can copy a section of a track if you like. This indicates the start of the section to be copied in the track. By default, this is set to the start of the track (0.000) but you can adjust this on the copy selection ruler, see below.
Copy End	Indicates the end of the section to be copied in the track. By default, this is set to the end of the track but you can adjust this on the copy selection ruler, see below.

By default, complete tracks are selected.

- If you want to copy and import a section of an audio CD track only, select the track in the list and specify the start and end of the selection to be copied by dragging the handles in the copy selection ruler.

NOTE

Note that you can import sections of several audio CD tracks by selecting them in turn and adjusting the selection. The start and end settings for each track are displayed in the list.

- You can audition the selected audio CD track by clicking the Play button.
  The track will be played back from selection start to selection end (or until you click the Stop button).
- The Play from left Marker (down arrow) and Play to Right Marker (up arrow) buttons allow you to audition the start and end of the selection only.
  The down arrow button will play a short snippet beginning at the start of the selection, while the up arrow button will play a snippet starting just before the end of the selection.
- To open the CD drive, click on the Eject button at the top of the dialog.

Importing Audio from video files

While you can automatically extract the audio when importing a video file, it is also possible to import the audio from a video file without importing the video itself:

PROCEDURE

1. Open the File menu, open the Import submenu and select "Audio from Video File…".

2. In the file dialog that opens, locate and select the video file and click Open.
   The audio in the selected video file is extracted and converted to a Wave file in the project's Audio folder.
   A new audio clip is created and added to the Pool. In the Project window, an event referencing the audio file is inserted on the selected track at the project cursor position. If no track was selected, a new track is created.
   This works just like importing regular audio files.

RELATED LINKS

Importing ReCycle files

ReCycle by Propellerhead Software is a program designed especially for working with sampled loops. By "slicing" a loop and making separate samples of each beat, ReCycle makes it possible to match the tempo of a loop and edit the loop as if it was built of individual sounds. Cubase can import two file types created by ReCycle:

- REX files (export file format of the first versions of ReCycle, extension ".rex").

▪ REX 2 files (file format of ReCycle 2.0 and later, extension ".rx2").

For this to work, the REX Shared Library needs to be installed on your system.

PROCEDURE

1. Select an audio track and move the project cursor to where you want the imported file to start.

   You probably want to import REX files to tempo based audio tracks, since this will allow you to change the tempo later on (having the imported REX file automatically adjust).

2. Select "Audio File…" from the Import submenu of the File menu.

3. On the file type pop-up menu in the file dialog, select REX File or REX 2 File.

4. Locate and select the file you want to import, and click Open.

   The file is imported and automatically adjusted to the current Cubase tempo.

   Unlike a regular audio file, the imported REX file will consist of several events, one for each "slice" in the loop. The events will automatically be placed in an audio part on the selected track and positioned so that the original internal timing of the loop is preserved.

5. If you now open the part in the Audio Part Editor, you can edit each slice separately by muting, moving and resizing events, adding effects and processing, etc.

   You can also adjust the tempo and have the REX file automatically follow (provided that its track is tempo based).

   NOTE

   You can achieve similar results by using Cubase's own loop slicing features.

RELATED LINKS

Importing compressed audio files

Cubase can import several common audio compression formats. The procedure is the same as when importing any non-compressed audio file, with one important thing to note:

For most compressed file formats, Cubase creates a copy of the file and converts this to Wave format (Windows) or AIFF format (Mac OS X) before importing it. The original compressed file will not be used in the project.

The imported file is placed in the designated project Audio folder.

IMPORTANT

The resulting Wave/AIFF file is several times larger than the original compressed file.

The following file types are supported:

FLAC files

FLAC is an open source format and stands for Free Lossless Audio Codec. Audio files in this format are typically 50 to 60% smaller than regular Wave files. FLAC files are not converted to Wave files on import.

MPEG audio files

MPEG, which stands for Moving Picture Experts Group, is the name of a family of standards used for encoding audio-visual information (e.g. movies, video, music) in a digital compressed format.

Cubase can read two types of audio MPEG files: MPEG Layer 2 (*.mp2) and MPEG Layer 3 (*.mp3). Currently, mp3 is the most common of these formats, while the mp2 format is mostly used in broadcast applications.

Ogg Vorbis files

Ogg Vorbis is an open and patent-free format that offers very small audio files maintaining comparatively high audio quality. Ogg Vorbis files have the extension ".ogg".

Windows Media Audio files (Windows only)

Windows Media Audio is an audio format developed by Microsoft, Inc. Due to advanced audio compression algorithms, Windows Media Audio files can be made very small, maintaining good audio quality. The files have the extension ".wma".

RELATED LINKS
Export Audio Mixdown on page 551

Exporting and importing standard MIDI files

Cubase can import and export standard MIDI files, which makes it possible to transfer MIDI material to and from virtually any MIDI application on any platform. When you import and export MIDI files, you can also specify whether certain settings associated with the tracks are included in the files (automation tracks, volume and pan settings, etc.).

Exporting MIDI files

To export your MIDI tracks as a standard MIDI file, open the File menu and select "MIDI File…" from the Export submenu. A regular file dialog opens, allowing you to specify a location and name for the file.

When you have specified a location and a name for the file, click "Save". The Export Options dialog opens, allowing you to specify a number of options for the file, e.g. what is included in the file, its type and its resolution (see below for a description of the options).
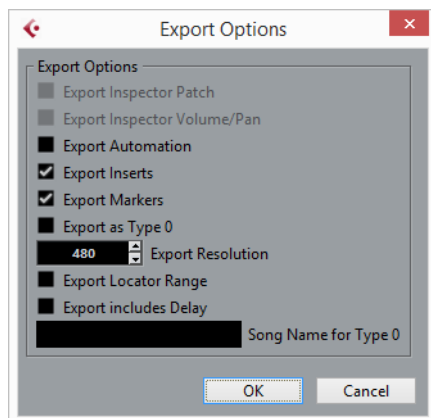
You will also find most of these settings in the Preferences dialog (MIDI–MIDI File page). If you set these up in the Preferences dialog, you only need to click OK in the Export Options dialog to proceed.

The dialog contains the following options:

Option	Description
Export Inspector Patch	If this is activated, the MIDI patch settings in the Inspector – Bank Select and Program Select (used for selecting sounds in the connected MIDI instrument) are included as MIDI Bank Select and Program Change events in the MIDI file.
Export Inspector Volume/Pan	If this is activated, Volume and Pan settings made in the Inspector are included as MIDI Volume and Pan events in the MIDI file.
Export Automation	If this is activated, the automation data (as heard during playback) are converted to MIDI controller events and included in the MIDI file. Cubase Elements only: This also includes automation recorded with the MIDI Control plug-in (see the separate PDF document "Plug-in Reference"). Note that if a continuous controller (e.g. CC7) has been recorded but the Read button is deactivated for the automation track (i.e. the automation is effectively switched off for this parameter), only the part data for this controller will be exported. If this option is deactivated and the Automation Read button is activated, no Continuous Controllers are exported. If the Read button is deactivated, the Controller data of the MIDI part are exported (these will now be handled like "regular" part data). In most cases it is recommended to activate this option.
Export Inserts	If this is activated, any MIDI modifiers that you have added will be included in the MIDI file.
Export Markers	If this is activated, any markers you have added will be included in the MIDI file as standard MIDI file marker events.

Option	Description
Export as Type 0	If this is activated, the MIDI file will be of type 0 (all data on a single track, but on different MIDI channels). If you do not activate this option, the MIDI file will be of Type 1 (data on separate tracks). Which type to choose depends on what you want to do with the MIDI file (in which application or sequencer it should be used, etc.).
Export Resolution	You can specify a MIDI resolution between 24 and 960 for the MIDI file. The resolution is the number of pulses, or ticks, per quarter note (PPQ) and determines the precision with which you will be able to view and edit the MIDI data. The higher the resolution, the higher the precision. Choose the resolution depending on the application or sequencer with which the MIDI file will be used, though, since certain applications and sequencers may not be able to handle certain resolutions.
Export Locator Range	If this is activated, only the range between the locators will be exported.
Export includes Delay	If this is activated, the delay of the MIDI track will be included in the MIDI file.
Song name for Type 0	You can use this text field to change the name of the MIDI file as displayed when loading this file in a keyboard.

NOTE

The MIDI file will include the tempo information of the project (i.e. it will include the tempo and time signature events of the Tempo Track Editor or, if the tempo track is deactivated on the Transport panel, the current tempo and time signature).

NOTE

Inspector settings other than those specified in the Export options are not included in the MIDI file! To include these, you need to convert the settings to "real" MIDI events and properties by using the Merge MIDI in Loop function for each track.

RELATED LINKS

Importing MIDI files

To import a MIDI file from disk, proceed as follows:

PROCEDURE

1. Select "MIDI File…" from the Import submenu of the File menu.

2. If there is already an open project, a dialog opens in which you can select whether a new project is created for the file.

    If you select "No", the MIDI file will be imported into the current project.

3. Locate and select the MIDI file in the file dialog that opens and click Open.

    If you choose to create a new project, select the project folder.

    Select an existing project folder or create a new one.

RESULT

The MIDI file is imported. The result depends on the contents of the MIDI file and the Import Options settings in the Preferences dialog (MIDI–MIDI File page). The Import Options are as follows:

Option	Description
Extract First Patch	If this is activated, the first Program Change and Bank Select events for each track are converted to Inspector settings for the track.
Extract First Volume/Pan	If this is activated, the first MIDI Volume and Pan events for each track are converted to Inspector settings for the track.
Import Controller as Automation Tracks	If this is activated, MIDI controller events in the MIDI file will be converted to automation data for the MIDI tracks. If this is deactivated, controller data for the MIDI Parts will be imported.
Import to Left Locator	If this is activated, the imported MIDI file will be placed so that it starts at the position of the left locator – otherwise it will start at the beginning of the project. Note that if you choose to have a new project created automatically, the MIDI file will always start at the beginning of the project.
Import Markers	If this is activated, any markers that have been added are imported with the MIDI file.
Import dropped File as single Part	If this is activated and you drag and drop a MIDI file into the project, the whole file will be placed on a single track.
Ignore Master Track Events on Merge	If this is activated and you import a MIDI file into the current project, tempo track data in the MIDI file are ignored. The imported MIDI file will play according to the current tempo track in the project. If this option is deactivated, the Tempo Track Editor will be adjusted according to the tempo information in the MIDI file.
Auto Dissolve Format 0	If this is activated and you import a MIDI file of type 0 into the project, the file will automatically be "dissolved": For each embedded MIDI channel in the file, a separate track will be inserted in the Project window. If this is deactivated, only one MIDI track will be created. This track will be set to MIDI Channel "Any", allowing all MIDI events to play back on their original channels. You can also use the "Dissolve Part" function on the MIDI menu to distribute the events onto different tracks with different MIDI Channels at a later stage.

Option	Description
Destination	Here, you can specify what happens when you drag a MIDI file into the project:
	• If you select the "MIDI Tracks" option, MIDI tracks are created for the imported file.
	• If you select the "Instrument Tracks" option, instrument tracks are created for each MIDI channel in the MIDI file. Furthermore, the program automatically loads appropriate presets.
	• If you select the "HALion Sonic SE multi-timbral" option, several MIDI tracks are created, each routed to a separate instance of HALion Sonic SE in the VST Instruments window and the appropriate presets are loaded.
	Note that in Cubase LE, this is automatically set to "MIDI Tracks" and the other options are not available.

RELATED LINKS

Support for the Yamaha XF data format

Cubase supports the Yamaha XF format. XF is an extension of the standard MIDI file format that allows you to save song-specific data with a MIDI file of type 0.

When importing a MIDI file containing XF data, this data is placed in parts on separate tracks called "XF Data", "Chord Data", or "SysEx Data". You can edit such a part in the List Editor (e.g. to add or change lyrics).

IMPORTANT

Do not change the order of events within the XF data or the event data itself, unless you have a lot of experience with XF data.

Cubase can also export XF data as part of a MIDI file of type 0. If you do not want to export the XF data together with the MIDI data, mute or delete the tracks containing the XF data.

Exporting and importing MIDI loops

Cubase allows you to import MIDI loops (file extension ".midiloop") and to save instrument parts as MIDI loops. MIDI loops are handy, as they contain not only MIDI notes and controllers, but also the number of voices, the associated VST instrument and instrument track preset settings.

RELATED LINKS

Customizing

Using the Setup options

You can customize the appearance of the following elements:

▪ Transport panel

▪ Info line

▪ Toolbars

▪ Inspector

The setup context menus

If you right-click the Transport panel, the toolbars, the info lines, or the Inspector, the respective setup context menu opens.

The following general options are available on the setup context menus:

▪ "Show All" makes all items visible.

▪ "Default" resets the interface to the default setting.

▪ "Setup…" opens the Setup dialog, see below.

If presets are available, they can be selected on the lower half of the menu.
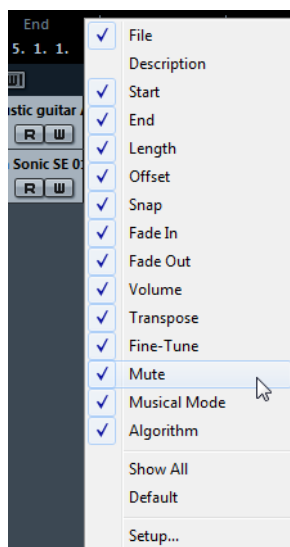
The info line setup context menu

The Setup dialogs

If you select "Setup…" from the setup context menus, the Setup dialog opens. This allows you to specify which elements are visible/hidden and to set the order of the elements. You can also save and recall setup presets in this dialog.
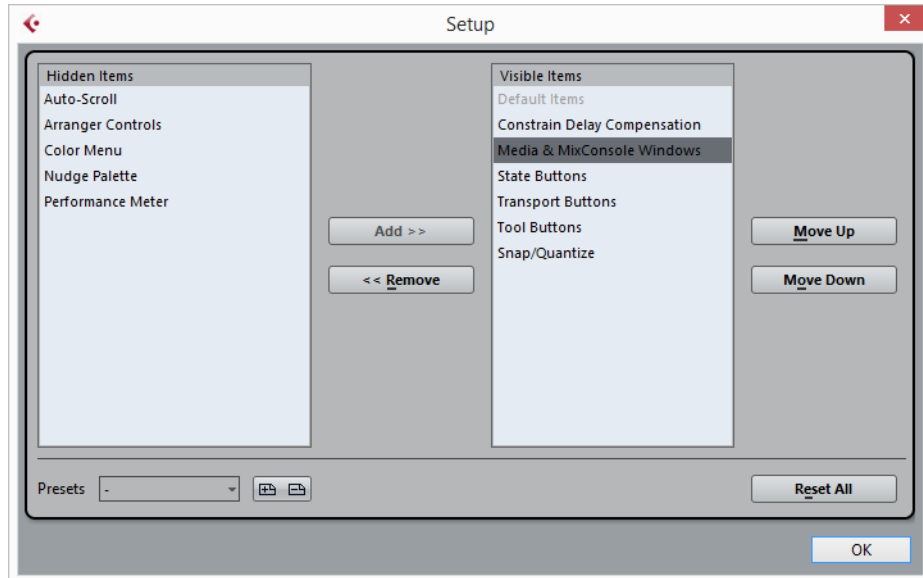
The dialog is divided into two sections. The left section displays the currently visible items and the right section displays the currently hidden items.

▪   You can change the current show/hide status by selecting items in one section and then use the arrow buttons in the middle of the dialog to move them to the other section.

Changes are applied directly.

▪   By selecting items in the "Visible Items" list and using the Move Up and Move Down buttons, you can reorder the items list.

Changes are applied directly. To undo all changes and revert to the standard layout, select "Default" on the setup context menu.

▪   If you click the Save button (disk icon) in the Presets section, a dialog opens, allowing you to name the current configuration and save it as a preset.

▪   To remove a preset, select it on the presets pop-up menu and click the trash icon.

▪   Saved configurations are available for selection from the Presets pop-up menu in the Setup dialog or directly from the setup context menu.

Appearance

In the Preferences dialog, the appearance of Cubase can be changed on the Appearance (Colors) and on the Metering (Appearance) page.

The following subpages are available on the Appearance–Colors page:

- **General**

  Allows you to adjust the default colors for the general interface of the program.

- **Track Type Defaults**

  Allows you to adjust the default colors for the different track types.

- **Project**

  Allows you to adjust the default colors in the Project window.

- **Editors**

  Allows you to adjust the default colors in the editors.

Appearance–Colors

The Appearance–Colors page features several subpages that allow you to change the default color of the Cubase desktop, the track types, the Project, Editor elements, and MixConsole elements.

To change a color, proceed as follows:

PROCEDURE

1. Select a subpage and click the color field of the element to which you want to assign a new color.

   A color selector pane opens.
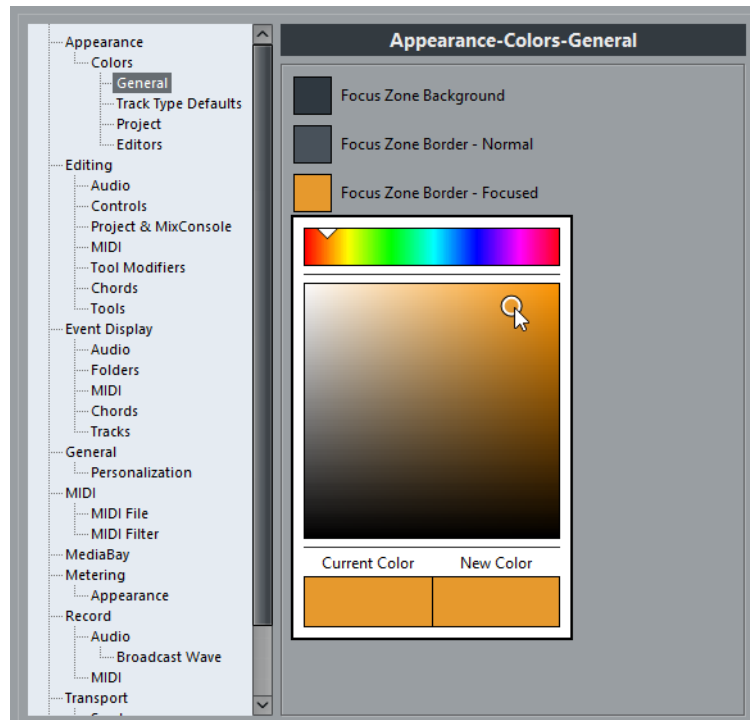
2. Use the tools in the color selector pane to select a new color.

   The current and the new color are shown at the bottom of the pane.

3. Click outside the color selector pane to confirm your settings and apply your changes.

   Note that you must restart the application for some changes to take effect.

   ▪ To copy a color and paste it on another element, even on another subpage, open the context menu in the color selector pane and select "Copy Color" and "Paste Color".

   You can also copy colors on the same subpage using drag and drop.
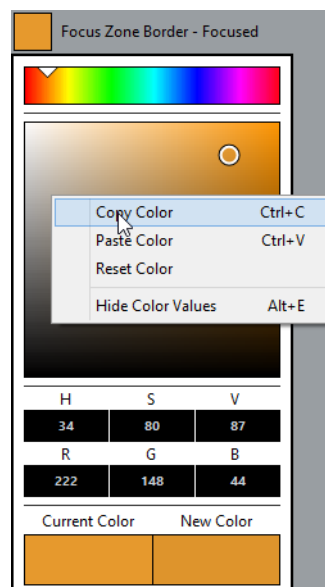
   ▪ To edit the colors numerically, open the context menu in the color selector pane, and select "Show Color Values".

▪ To select any color in Cubase as new color, open the color selector pane, hold down [Alt]/[Option], and click anywhere in the application.

The selected color is displayed in the "New Color" field.

Metering–Appearance

Cubase allows for precise color assignment of level meter values. On the Metering–Appearance page you can specify colors for quick identification of what levels are being reached.
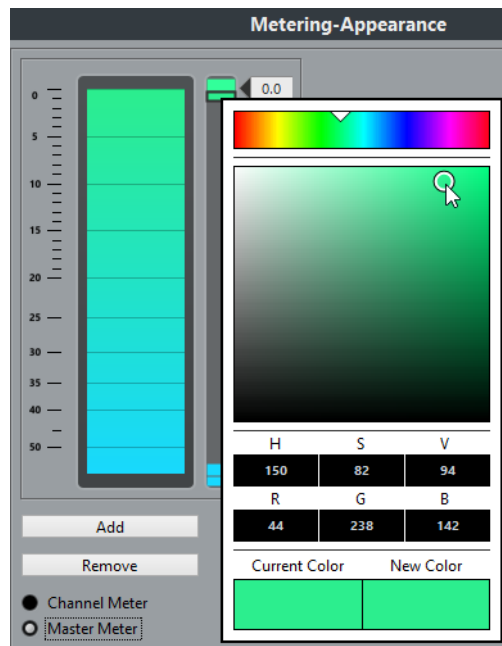
You can adjust the colors for the Channel Meter or the Master Meter. For the Master Meter you can only make changes for the Digital Scale scaling mode. Changes take effect when you click Apply or OK.

To adjust the levels and colors, activate the Channel Meter or Master Meter option and proceed as follows:

▪ To specify the level for a color change, double-click a handle to the right of the meter scale and enter the level (dB) value.

Note that for dB values less than zero, you must add a minus sign before the entered number.

You can also click a handle and drag it to a specific level. Press [Shift] for more accurate positioning. Alternatively, you can nudge with the Arrow Up/Down keys. Press [Shift] for faster positioning.

▪ To assign a color, click the upper or lower part of a handle so that a black frame is shown, and use the color selector pane to select a color (see above).

Selecting the same color for the upper and lower part of the handle results in a meter that changes its colors gradually, while separate colors indicate level changes even more precisely.

- To add more color handles, click the Add button, or [Alt]/[Option]-click at a level position to the right of the meter scale. Each new handle is automatically associated with a default color.

- To remove a handle, select the handle and click the Remove button, or [Ctrl]/[Command]-click the handle.

Applying colors in the Project window

You can use color scheming for an easier overview of tracks and events in the Project window. Colors can be applied individually to tracks and events/parts. If you color a track, the corresponding events and parts are displayed in the same color. However, you can also color events and parts differently, "overriding" the applied track color.

In the following sections you will learn how to set up preferences to color tracks automatically, how to color parts or events manually, how to determine whether you want to color the events themselves or their background, and how to customize the color palette for selecting colors.

Colorize Track Controls

In the Preferences dialog (Event Display–Tracks page), you can find the "Colorize Track Controls" slider that allows you apply the track color to the track controls.

Colorize Folder Track Controls Only

You can restrict the effect of the **Colorize Track Control** function to folder tracks only. This is useful in projects with a large number of tracks and folder tracks.

PROCEDURE

1. Select **File > Preferences > Event Display > Tracks**.

2. Drag the **Colorize Track Controls** slider to the right.
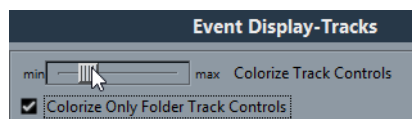
3. Activate **Colorize Only Folder Track Controls**.

4. Click **OK**.

5. In the track list, select the folder track that you want to colorize.

6. In the **Project** window toolbar, select the **Color Tool** and click again to select a color.

RESULT

Only the folder track controls are colorized.

Applying track colors automatically

In the Preferences dialog (Event Display–Tracks page), you can find the "Auto Track Color Mode" option.
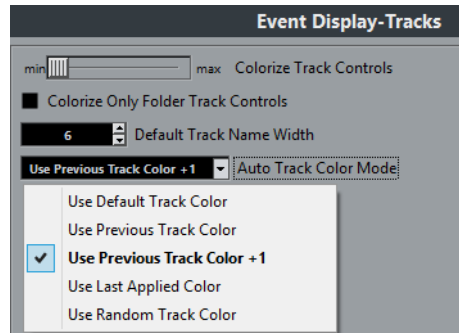
This offers you several options for automatically assigning colors to tracks that are added to the project. The following options are available:

Use Default Track Color

The default color (gray) is assigned.

Use Previous Track Color

Analyzes the color of the selected track and uses the same color for the new track.

Use Previous Track Color +1

Analyzes the color of the selected track and uses the color that comes next in the color palette for the new track.

Use Last Applied Color

Uses the color that is selected in the Select Colors pop-up menu.

Use Random Track Color

Uses the color palette as a basis to assign track colors randomly.

Coloring Tracks, Parts, or Events Manually

The **Color** tool on the **Project** window toolbar allows you to color each track, part, or event individually.

PROCEDURE

1.   In the **Project** window, do one of the following:
     ▪   To change the color of an event or part, select it.
     ▪   To change the color of a track, select the track and deselect all its events or parts.

2. On the toolbar, select the **Color** tool, click again, and select a color from the pop-up menu.
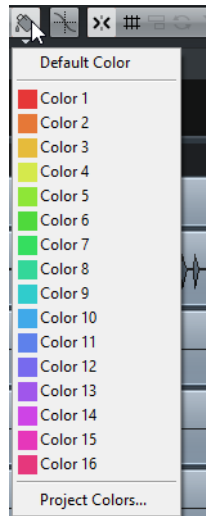
RESULT

The color is applied to the selected item. If you change the color of a track, the new color is used for all events on the track and for the corresponding channel in the **MixConsole**.

NOTE

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

Resetting the Default Color

You can reset the color of a track, part, or event to the default color.

PROCEDURE

1. In the **Project** window, select the event or part that you want to reset to the default color.

2. On the toolbar, select the **Color** tool, click again, and select **Default Color** from the pop-up menu.

Project Colors Dialog

The **Project Colors** dialog allows you to set up a different set of colors for items in the **Project** window.

▪ To open the **Project Colors** dialog, select the **Color** tool in the **Project** window toolbar. Click again to open a pop-up menu and select **Project Colors**.

Color fields

Click a field to open a color selector pane that allows you to specify a new color.

Click **Options** for the following options.

Append New Color

Adds a new color button at the bottom of the color list.

Insert New Color before Selection

Adds a new color button above the selected color button.

Remove Selected Color

Removes the selected color.

Reset Selected Color

Resets the selected color to the factory settings.

Increase/Reduce Intensity of all Colors

Increases or reduces the intensity of all colors.

Increase/Reduce Brightness of all Colors

Increases or reduces the brightness of all colors.

Save Current Set as Program Defaults

Saves the current set of colors as default.

Load Program Defaults to Current Set

Applies the default set of colors.

Reset Current Set to Factory Settings

Returns to the standard color palette.

635

Adding and editing individual colors

You can use the Options menu in the Project Colors dialog to fully customize the color palette.
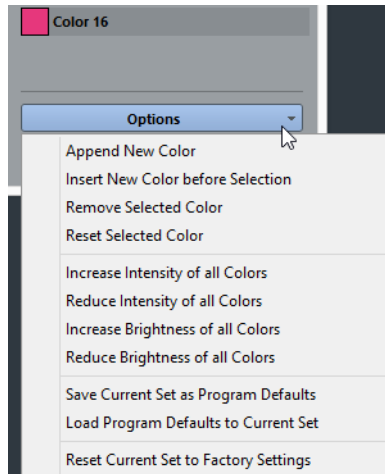
The following options are available:

Append New Color

> This adds a new color button at the bottom of the colors list. To define a color, click the color button, and in the color selector pane that opens, define a color.

Insert New Color before Selection

> This adds a new color button above the selected color button. To define a color, click the color button, and in the color selector pane that opens, define a color.

Remove Selected Color

> This removes the selected color.

Reset Selected Color

> This resets the selected color.

Increase/Reduce Intensity of all Colors

> This increases or reduces the intensity of all colors.

Increase/Reduce Brightness of all Colors

> This increases or reduces the brightness of all colors.

Save Current Set as Program Defaults

> This saves the current set as default.

Load Program Defaults to Current Set

> This applies the default set.

Reset Current Set to Factory Settings

> This returns to Cubase's standard color palette.

Where are the settings stored?

As you have seen, there are a large number of ways in which you can customize Cubase. While some of the settings you make are stored with each project, others are stored in separate preference files.

If you need to transfer your projects to another computer (e.g. in another studio), you can bring all your settings along by copying the desired preference files and installing them on the other computer.

NOTE

It is a good idea to make a backup copy of your preference files once you have set things up the way you want! This way, if another Cubase user wants to use his or her personal settings when working on your computer, you can restore your own preferences afterwards.

- On Windows systems, 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 Mac OS X systems, 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 (see below), is saved when exiting the program.

NOTE

Program functions (e.g. crossfade) or configurations (e.g. panels) not used in the project will not be stored.

Some of the preferences are not stored in the default preferences folder. A list can be found in the Steinberg Knowledge Base.

To open the Knowledge Base, browse to the Steinberg web site, click "Support" and choose "Knowledge Base" in the list on the left.

Updating from a Previous Version of Cubase

When you are updating from Cubase 6 or higher, the customized settings of your previous installation are used for the new Cubase version.

When your previous Cubase version is older than Cubase 6, its settings are discarded, and the default settings of the new version of Cubase are used.

Disabling the Preferences

Sometimes you might experience odd program behaviour that can be due to inconsistent preferences settings. In such a case, you should save your project and relaunch Cubase. You can disable or delete the current preferences settings, and load the factory defaults instead.

PROCEDURE

1. Quit Cubase.

2. Launch Cubase, and when the splash screen appears, hold down [Shift]-[Ctrl]/[Command]-[Alt]/[Option].

3. Select one of the following options in the dialog that appears:
   - **Use current program preferences**

     Opens the program with the current preference settings.
   - **Disable program preferences**

     Disables the current preferences, and opens the program with the factory default settings instead.
   - **Delete program preferences**

     Deletes the preferences and opens the program with the factory default settings instead. This process cannot be undone. Note that this affects all versions of Cubase installed on your computer.

RELATED LINKS

Optimizing

Optimizing Audio Performance

This section gives you some hints and tips on how to get the most out of your Cubase system, performance-wise. Some of this text refers to hardware properties and can be used as a guide when upgrading your system. Look for details and current information on the Cubase web site.

Performance Aspects

Tracks and Effects

The faster your computer, the more tracks, effects, and EQ you are able to play. Exactly what constitutes a fast computer is almost a science in itself, but some hints are given below.

Short Response Times (Latency)

Another aspect of performance is response time. The term "latency" refers to the buffering, that is the temporary storing of small chunks of audio data during various steps of the recording and playback process on a computer. The more and larger those chunks, the higher the latency.

High latency is most irritating when playing VST instruments and when monitoring through the computer, that is when listening to a live audio source via the Cubase MixConsole and effects. However, very long latency times (several hundred milliseconds) can also affect other processes like mixing, for example, when the effect of a fader movement is heard only after a noticeable delay.

While Direct Monitoring and other techniques reduce the problems associated with very long latency times, a system that responds fast will always be more convenient to work with.

- Depending on your audio hardware, it may be possible to trim your latency times, usually by lowering the size and the number of buffers.

- For details, refer to the audio hardware documentation.

System Factors That Affect Performance

RAM

The more RAM is installed in your computer, the better.

IMPORTANT

On computers running a Windows 32-bit operating system, a running application can address a maximum of 2 GB of RAM. On a Macintosh computer running 32-bit Mac OS X, this limit is 4 GB. The 64-bit versions of Windows and Mac OS X are able to assign considerably more than 4 GB of RAM to a running 64-bit application.

The RAM limitation is imposed by the operating system, and it is independent of the amount of RAM that you may have installed in your computer.

Some program functions may use all the available memory, for example, recording, the use of effect plug-ins, and the pre-loading of samples.

IMPORTANT

When a function has used up all the memory made available by the operating system, the computer will crash.

Always keep in mind the RAM limitation of your operating system when setting up your projects.

RELATED LINKS
RAM Requirements for Recording on page 153
Smart Plug-In Processing on page 241

CPU and Processor Cache

The faster the computer processor, the better. But there are a number of factors that affect the apparent speed of a computer: the bus speed and type (PCI is strongly recommended), the processor cache size and of course, the processor type and brand. Cubase relies heavily on floating point calculations. When shopping for a processor, make sure that you get one that is powerful in calculating floating point arithmetics.

Cubase features full support for multi-processor systems. If you own a computer system with more than one processor, Cubase can take advantage of the total capacity and evenly distribute the processing load to all available processors.

RELATED LINKS
Multi Processing on page 642

Hard Disk and Controller

The number of hard disk tracks that you can record and play back at the same time also depends on the speed of your hard disk and hard disk controller. If you use E-IDE disks and controllers, make sure that the transfer mode is DMA Busmaster. Under Windows, you can check the current mode by launching the Windows Device Manager and looking for properties of the IDE ATA/ATAPI controller's primary and secondary channel. DMA transfer mode is enabled by default, but may be turned off by the system in case of hardware problems.

Audio Hardware and Driver

The hardware and its driver can have some effect on regular performance. A badly written driver can reduce the performance of your computer. But where the hardware driver design makes the most difference is with latency.

NOTE

We recommend that you use audio hardware for which there is a specific ASIO driver.

This is especially true when using Cubase for Windows:

- Under Windows, ASIO drivers written specifically for the hardware are more efficient than the Generic Low Latency ASIO Driver or a DirectX driver and produce shorter latency times.

- Under Mac OS X, audio hardware with properly written Mac OS X (Core Audio) drivers can be very efficient and produce very low latency times.

However, there are additional features currently only available with ASIO drivers, such as the ASIO Positioning Protocol.

Settings That Affect Performance

Audio Buffer Settings

Audio buffers affect how audio is sent to and from the audio hardware. The size of the audio buffers affects both the latency and the audio performance.

Generally, the smaller the buffer size, the lower the latency. On the other hand, working with small buffers can be demanding for the computer. If the audio buffers are too small, you may get clicks, pops or other audio playback problems.

- To adjust the buffer size settings under Mac OS X, select **Devices > Device Setup**, and select the **Device Setup** dialog. You may also find buffer settings in the control panel for the audio hardware.

- To adjust the buffer size settings under Windows, select **Devices > Device Setup**, select the driver page, and click **Control Panel**.

Multi Processing

When Multi Processing is activated and there is more than one CPU in your system, the processing load is distributed evenly to all available CPUs, allowing Cubase to make full use of the combined power of the multiple processors.

- To activate Multi Processing, select **Devices > Device Setup**, select **VST Audio System**, and activate **Multi Processing**.

VST Performance Window

This window shows the audio processing load and the hard disk transfer rate. This allows you to verify that you do not run into performance problems when adding effects or plug-ins, for example.

- To open the **VST Performance** window, select **Devices > VST Performance**.
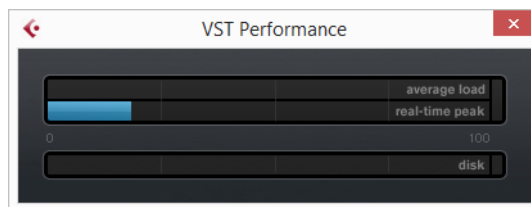
Average load

Shows how much of the available CPU power is used for audio processing.

Real-time peak

Shows the processing load in the realtime path of the audio engine. The higher this value, the higher the risk that dropouts occur.

Overload indicator

The overload indicator to the right of the **real-time peak** indicator and the **average load** indicator displays overloads of the average or real-time indicator.

If it lights up, decrease the number of EQ modules, active effects, and audio channels that play back simultaneously. You can also activate the ASIO-Guard.

Disk

Shows the hard disk transfer load.

Disk overload indicator

The overload indicator to the right of the disk indicator lights up if the hard disk does not supply data fast enough.

If it lights up, use **Disable Track** to reduce the number of tracks playing back. If this does not help, you need a faster hard disk.

NOTE

You can show a simple view of the performance meter on the **Transport** panel and on the **Project** window toolbar. These meters only feature the average and the disk indicator.

ASIO-Guard

The ASIO-Guard allows you to shift as much processing as possible from the ASIO realtime path to the ASIO-Guard processing path. This results in a more stable system.

The ASIO-Guard allows you to preprocess all channels as well as VST instruments that do not need to be calculated in realtime. This leads to less dropouts, the ability to process more tracks or plug-ins, and the ability to use smaller buffer sizes.

ASIO-Guard Latency

High ASIO-Guard levels lead to an increased ASIO-Guard latency. When you adjust a volume fader, for example, you will hear the parameter changes with a slight delay. The ASIO-Guard latency, in contrast to the latency of the audio hardware, is independant from live input.

Restrictions

The ASIO-Guard cannot be used for:

- Realtime-dependent signals

- External effects and instruments

- Plug-ins that have a different bit version than the operating system

NOTE

If you select **Devices > Plug-in Manager** and click **Show Plug-in Information**, you can deactivate the ASIO-Guard option for selected plug-ins.

If you activate the monitoring for an input channel, a MIDI or a VST instrument channel, the audio channel and all dependent channels are automatically switched from ASIO-Guard to realtime processing and vice versa. This results in a gentle fade out and fade in of the audio channel.

Activating the ASIO-Guard

PROCEDURE

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

2. In the **Device Setup** dialog, open the **VST Audio System** page.

3.   Activate the **Activate ASIO-Guard** option.

NOTE

This option is only available, if you activate **Multi Processing**.

4.   Select an **ASIO-Guard Level**.

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

Preferences

The **Preferences** dialog provides options and settings that control the global behavior of the program.

Preferences Dialog

The Preferences dialog is divided into a navigation list and a settings page. Clicking one of the entries in the navigation list opens a settings page.

▪ To open the **Preferences** dialog, select **File > Preferences**.
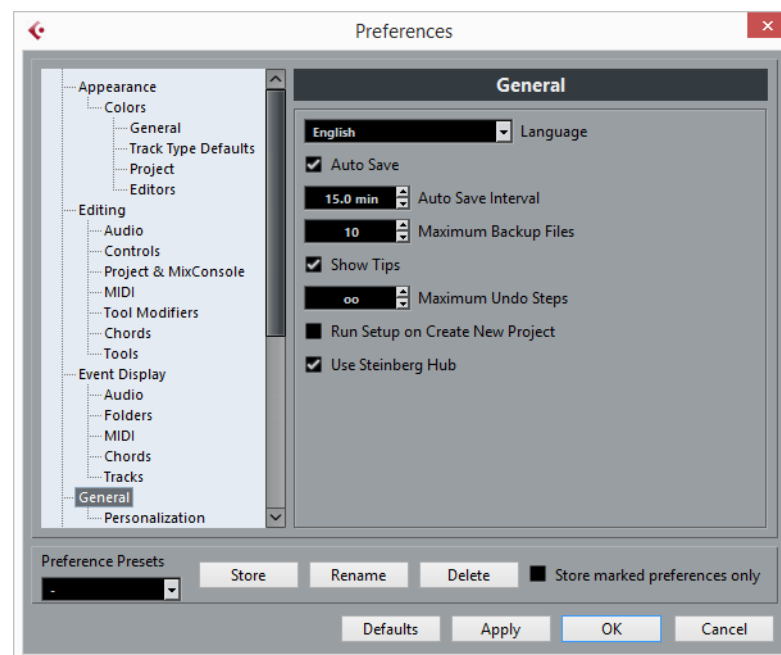
In addition to the settings, the dialog provides the following options:

Preference Presets

Allows you to select a saved preference preset.

Store

Allows you to save the current preferences as a preset.

Rename

Allows you to rename a preset.

Delete

Allows you to delete a preset.

Store marked preferences only

Allows you to select which pages are included in the preset.

Help

Opens the dialog help.

Defaults

Resets the options on the active page to their default settings.

Apply

Applies any changes that you have made without closing the dialog.

OK

Applies any changes that you have made and close the dialog.

Cancel

Closes the dialog without saving any changes.

Saving a Preference Preset

You can save complete or partial preference settings as presets.

PROCEDURE

1. Select **File > Preferences**.
2. In the **Preferences** dialog make your settings.
3. Click the **Store** button in the lower left section of the dialog.
4. Enter a preset name and click **OK**.

RESULT

Your settings are now available on the **Preferences Presets** pop-up menu.

Saving Partial Preferences Settings

You can save partial preferences settings. This is useful when you have made settings that only relate to a certain project or situation, for example. When you apply a saved partial preference preset you only change the saved settings. All other preferences will be left unchanged.

PROCEDURE

1. Select **File > Preferences**.
2. In the **Preferences** dialog make your settings.

3. Activate **Store marked preferences only**.

    In the preferences list a **Store** column is shown.
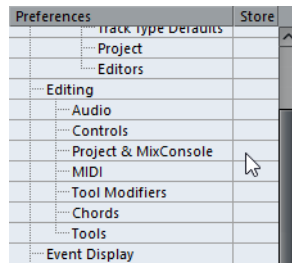
4. Click in the **Store** column of the preference pages that you want to save.

5. Click **Store** in the lower left section of the dialog.

6. Enter a preset name and click **OK**.

RESULT

Your settings are now available from the **Preferences Presets** pop-up menu.

Appearance

Colors

This page features subpages that allow you to change the default color settings.

General

Allows you to adjust the default colors for the general interface of the program.

Track Type Defaults

Allows you to adjust the default colors for the different track types.

Project

Allows you to adjust the default colors in the **Project** window.

Editors

Allows you to adjust the default colors in the editors.

MixConsole Faders

Allows you to adjust the default colors for the level faders of the channel types in the **MixConsole**.

MixConsole Racks

Allows you to adjust the default colors for the racks in the **MixConsole**.

MixConsole Channel Strip

Allows you to adjust the default colors for the channel strips in the **MixConsole**.

Editing

Select Track on Background Click

This allows you to select a track by clicking in the event display background.

Auto Select Events under Cursor

If this option is activated, all events in the **Project** window or in an editor that are currently touched by the project cursor are automatically selected. This can be helpful when you rearrange your project, because it allows you to select whole sections (on all tracks) simply by moving the project cursor.

Cycle Follows Range Selection

If this is activated, range selections that you make in the **Sample Editor** will be mirrored in the **Project** window as well. This lets you audition a range in the **Sample Editor** as a loop with the main transport controls, rather than with the **Audition** and **Audition Loop** controls in the **Sample Editor**.

Delete Overlaps

If this is activated and you move, size, or nudge an event so that it partly overlaps another event, the other event is automatically resized so that the overlapped (hidden) section is removed. Hold [Shift] while moving to override this setting.

Link Editors

When this is activated, the parts or events shown in the open editor windows will follow the selection that you make in the **Project** window.

Parts Get Track Names

If this is activated and you move an event from one track to another, the moved event will automatically be named according to its new track. Otherwise, the event will retain the name of the original track.

Quick Zoom

If this option is activated, the contents of parts and events will not be continuously redrawn when you zoom manually. Instead, the contents are redrawn once you have stopped changing the zoom – activate this if screen redraws are slow on your system.

Use Up/Down Navigation Commands for Selecting Tracks only

- When this option is deactivated and no event/part is selected in the **Project** window, the up/down arrow keys on the computer keyboard are used to step through the tracks in the track list.

- When this option is deactivated and an event/part is selected in the **Project** window however, the up/down arrow keys still step through the tracks in the track list. Only on the currently selected track, the first event/part will also be selected.

- When this option is activated, the up/down arrow keys are only used to change the track selection – the current event/part selection in the **Project** window will not be altered.

Track Selection follows Event Selection

If this option is activated and you select an event in the **Project** window, the corresponding track is also automatically selected.

Automation Reduction Level

This setting determines the amount of reduction applied when you add automation events by drawing or by using the **Write** function. When you write or draw Automation events, they are added as a continuous stream of densely packed events. The Reduction function will remove superfluous event points, and the automation curve contains only the event points that are necessary to reproduce your actions.

- The lower the reduction level, the more automation events are retained, resulting in a more detailed automation curve. Usually the default setting is sufficient.

- The minimum reduction level setting is not recommended as this will simply retain a lot of unnecessary events.

Show Automation Track in Project on Writing Parameter

If you activate this option, the corresponding automation track is revealed on writing automation parameters. This is useful if you want to have a visual control of all parameters that are changed during writing.

Automation follows Events

If you activate this option, automation events will automatically follow when you move an event or part on the track.

This facilitates setting up automation that is related to a specific event or part, instead of a specific position in the project. For example, you can automate the panning of a sound effect event (having the sound pan from left to right, etc.) – if you need to move the event, the automation will automatically follow. The rules are:

- All automation events for the track between the start and end of the event or part will be moved. If there are automation events in the position to which you move the part or event, these will be overwritten.

- If you duplicate an event or part (by holding [Alt]/[Option] and dragging or by using the **Duplicate** or **Repeat** functions) the automation events will also be duplicated as well.

- This function also affects copying and pasting.

Drag Delay

When you click and drag an event, this setting determines the delay before the event is moved. This helps you avoid accidentally moving events when you click on them in the **Project** window.

Editing - Audio

Treat Muted Audio Events like Deleted

If you have two overlapping audio events in your project and you mute the top one (the event you hear during playback), playback of the other (obscured) event will still only start at the end of the overlapping section.

If this is not what you want, **Treat Muted Audio Events like Deleted** allows you to immediately play the obscured event when muting the top event.

Use Mouse Wheel for Event Volume and Fades

- If this is activated, you can use the mouse wheel to move the event volume curve up or down.

- When you hold down [Shift] while moving the mouse wheel, the fade curves will be affected. To move the end point of the fade in, position the mouse in the left half of the event. To move the start point of the fade out, position the mouse in the right half of the event.

On Import Audio Files

This setting determines what happens when importing an audio file into a project:

- **Open Options Dialog**
  An Import Options dialog opens when you import, allowing you to select whether you want to copy the file to the audio folder and/or convert it to the project settings.

- **Use Settings**
  Allows you to set the following standard actions:
  Copy Files to Working Directory copies the files to the project's audio folder before import.
  Convert and Copy to Project If Needed copies the files to the project's audio folder before import and converts them if the files have a different sample rate or a lower resolution than the project settings.

Enable Automatic Hitpoint Detection

If this is activated, and you add an audio file to your project by recording or by importing, Cubase automatically detects its hitpoints. This allows you to navigate to hitpoints of an audio file from within the **Project** window.

Remove Regions/Hitpoints on all Offline Processes

If this is activated and you perform offline processing on an audio range that contains regions, these will be removed.

On Processing Shared Clips

This setting determines what happens when you apply processing to a shared clip, that is a clip that is used by more than one event in the project:

- **Open Options Dialog**

  An **Options** dialog appears, allowing you to select whether you want to create a new version of the clip or apply the processing to the existing clip.

- **Create New Version**

  A new editing version of the clip is automatically created, and the processing is applied to that version (leaving the original clip unaffected).

- **Process Existing Clip**

  The processing is applied to the existing clip (which means that all events playing that clip will be affected).

Default Warping Algorithm

Determines which warp algorithm is used for new audio clips in the project.

Editing - Controls

Many Cubase parameters are shown as rotary encoders, sliders, and buttons that emulate hardware interfaces. Others are edited numerically in value fields. This page allows you to select the preferred ways of controlling encoders, sliders, and value fields.

Value Box/Time Control Mode

The menu contains the following options:

- **Text Input on Left-Click**

  In this mode, clicking a value box will open it for editing by typing.

- **Increment/Decrement on Left/Right-Click**

  In this mode, you can click with the left or right mouse button to decrease or increase the value. To edit values by typing in this mode, please double-click. Under Mac OS X, right-clicking is the same as [Ctrl]/[Command]-clicking. We recommend that you use a two-button mouse and set up the right button to generate a [Ctrl]/[Command]-click.

- **Increment/Decrement on Left-Click and Drag**

  In this mode, you can click and drag up or down to adjust the value (much like dragging a vertical fader). Double-click to enter values manually.

Knob Mode

The menu contains the following options:

- **Circular**

  To move an encoder, click on it and drag in a circular motion, such as turning a real encoder. When you click anywhere along the encoder's edge, the setting is immediately changed.

- **Relative Circular**

  Works like the **Circular** option, but clicking does not automatically change the setting. This means you can make adjustments to the current setting by clicking anywhere on an encoder and dragging. There is no need to click on the exact current position.

- **Linear**

  To move an encoder, click on it and drag up or down (or left or right) with the mouse button pressed – as if the encoder was a vertical (or horizontal) slider.

Slider Mode

The menu contains the following options:

- **Jump**

  In this mode, clicking anywhere on a slider will make the slider handle instantly move to that position.

- **Touch**

  In this mode, you have to click on the actual slider handle to adjust the parameter. This reduces the risk of accidentally moving sliders.

- **Ramp**

  In this mode, clicking anywhere on a slider (but not on the actual handle) and keeping the mouse button pressed causes the handle to move smoothly to the new position.

- **Relative**

  In this mode, clicking on a slider will not immediately change the setting. Instead you click and drag up or down – the setting will be changed according to how far you drag, not according to where you click.

Editing - MIDI

Select Controllers in Note Range: Use Extended Note Context

When this is activated and you move notes together with their controllers, for example, in the Key Editor, the extended note context will be taken into account. This means that controllers between the last selected note and the following note (or the end of the part) will also be moved. When this is deactivated, only the controllers between the first and the last selected note will be moved.

Legato Overlap

Determines the result of the **Legato** function on the **MIDI** menu.

- If **Legato Overlap** is set to 0 Ticks, the **Legato** function extends each selected note so that it reaches the next note exactly.

- Setting **Legato Overlap** to a positive value causes the notes to overlap by the specified number of ticks.

- Setting **Legato Overlap** to a negative value makes the Legato function leave a slight gap between the notes.

Legato Mode: Between Selected Notes Only

When this is activated, the length of selected notes will be adjusted so that they reach the next selected note, allowing you to apply **Legato** only to your bass line, for example.

Split MIDI Events

If you split a MIDI part in the **Project** window (with the **Cut** tool or one of the split functions) so that the split position intersects one or several MIDI notes, the result depends on this setting.

- If **Split MIDI Events** is activated, the intersected notes are split. This creates new notes at the beginning of the second part.

- If **Split MIDI Events** is deactivated, the notes will remain in the first part, but stick out after the end of the part.

Split MIDI Controllers

If you split a MIDI part containing controllers, the result depends on this setting:

- If Split MIDI Controllers is activated and the part contains a controller with a value other than zero at the split position, a new controller event (of the same type and value) will be inserted at the split position (at the start of the second part).

- If Split MIDI Controllers is deactivated, no new controller events will be inserted.

NOTE

If you just split a part and play back the result, it will sound the same regardless of this setting. However, if you split a part and delete the first half or move the second half to a different position in the project, you may want to activate **Split MIDI Controllers** to make sure all controllers have the correct value at the beginning of the second part.

Editing - Project & MixConsole

Select Channel/Track on Solo

When you activate this option, a track in the track list or a channel in the
MixConsole automatically gets selected when the **Solo** button is activated.
Deactivating this option always keeps the current selection status, regardless
of the solo setting for the tracks.

Select Channel/Track on Edit Settings

When you activate this option, a track in the track list or a channel in the
MixConsole automatically gets selected when you click the respective edit
button (e). Deactivating this option always keeps the current track/channel
selection.

Scroll To selected Track

If you activate this option, selecting a **MixConsole** channel automatically
scrolls the track list to display the respective track.

Enable Record on Selected Audio Track

When this is activated, selected audio tracks are automatically record
enabled.

Enable Record on Selected MIDI Track

When this is activated, the selected MIDI tracks are automatically record
enabled.

Enable Solo on Selected Track

When this is activated, the selected tracks are automatically soloed.

Enlarge Selected Track

Activate this option to enter a mode where the selected track in the **Project**
window will be enlarged. You can adjust the size directly in the track list if the
default enlargement factor does not suit you. When you select another track
in the track list, this track is automatically enlarged, and the previously
selected track is displayed in its previous size.

Editing - Tool Modifiers

On this page you can specify which modifier keys are used for additional functionality when using tools.

PROCEDURE

1. Select an option in the **Categories** list.

2. Select the action for which you want to edit the modifier key in the **Action** list.

3. On your computer keyboard, hold down the modifier keys and click **Assign**.

RESULT

The current modifier key(s) for the action is replaced. If this tool already has assigned modifier key(s), you will be asked whether you want to replace them.

Editing - Chords

'X' Chords Mute Notes on Tracks That are in Follow Chord Track Mode

This determines what happens when you play back a track that follows the chord track and the cursor reaches an undefined chord event (X chord). Activate this option to mute playback. Deactivate this option to continue playback of the last defined chord event.

Disable 'Acoustic Feedback' during Playback

If you activate this option, **Acoustic Feedback** is automatically disabled on playback. This ensures that chord events are not triggered twice.

Hide muted Notes in Editors

If you set up a MIDI track to follow the chord track by activating one of the **Follow Chord Track** options, some of the original MIDI notes may be muted. Activate this option to hide these notes in the editors.

Editing - Tools

Select Tool: Show Extra Info

Activate this to show a tooltip for the **Object Selection** tool in the **Project** window event display. This tooltip indicates the current pointer position and the name of the track and event at which you are pointing.

Zoom Tool Standard Mode: Horizontal Zooming Only

This affects the result when using the **Zoom** tool (magnifying glass).

If this is activated and you drag a selection rectangle with the **Zoom** tool, the window is only zoomed horizontally and the track height does not change. If this option is deactivated, the window is zoomed both horizontally and vertically.

Pop-up Toolbox on Right-Click

If this is activated, the toolbox opens on right-click in the event display and editors. You can change the number of rows in which the tools are arranged on the toolbox. Keep the right mouse button pressed until the mouse pointer changes to a double arrow and drag to the bottom or right.

- To open the context menu instead of the toolbox, press any modifier key when right-clicking.

Cross-Hair Cursor

This allows you to set up a cross-hair cursor when working in the event display and editors, facilitating navigation and editing, especially when arranging in large projects. You can set up the colors for the line and the mask of the cross-hair cursor, and define its width. The cross-hair cursor works as follows:

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

- If the **Draw** tool, the **Cut** tool, or any other tool that makes use of this function is selected, the cross-hair cursor appears as soon as you move the mouse over the event display.

- The cross-hair cursor is only available for tools where such a function is of any use.

Event Display

The **Event Display** section contains several settings for customizing the display in the **Project** window.

Show Event Names

Determines whether the names of parts and events are shown.

Hide Truncated Event Names

When zooming or resizing elements, the events can become very small so that the name is no longer completely visible. The name gets truncated. If this option is activated, event names are hidden if they do not fit into the event.

Show Overlaps

When events overlap, this setting allows you to specify when the overlapping areas are displayed.

Grid Overlay Intensity

Increases or decreases the overlay intensity of the displayed grid lines.

Event Handling Opacity

Increases or decreases the opacity of an overlying event background when you move it.

Smallest Track Height To Show Data

Specifies from which track height the track contents are displayed.

Smallest Track Height To Show Name

Specifies from which track height the track names are displayed.

Event Display - Audio

Interpolate Audio Waveforms

If you have zoomed in to one sample per pixel or less, the appearance of the samples depends on this setting. If the option is deactivated, single sample values are drawn as steps. If the option is activated, the sample values are interpolated to form curves.

Show Event Volume Curves Always

If activated, event volume curves, as created by the fade and volume handles, are shown for all events, regardless of whether they are selected or not. When the option is deactivated, volume curves are only shown for selected events. However, note that you can still adjust fades and volumes for events that are not selected, by clicking and dragging the top left, middle, or right edge respectively.

Show Waveforms

If activated, audio waveforms are displayed for audio events.

Show Hitpoints on Selected Events

If activated, hitpoints are displayed for audio events.

Waveform Brightness

Increases or decreases the brightness of the displayed waveforms.

Waveform Outline Intensity

Increases or decreases the intensity of the waveform outline.

Fade Handle Brightness

Increases or decreases the brightness of the set fade lines within audio events.

Background Color Modulation

When this is activated, the backgrounds of audio waveforms reflect the waveform dynamics. This is especially useful to get an overview when working with small track heights.

Event Display - MIDI

Default Edit Action

Determines which editor is opened when you double-click a MIDI part or when you select it and press [Ctrl]/[Command]-[E]. Note that this setting is overwritten for tracks with drum maps if the **Edit as Drums when Drum Map is assigned** option is activated.

Part Data Mode

Determines if and how events in MIDI parts are shown: not shown, as lines, as score notes, as drum notes, or as blocks. Note that this setting is overwritten for tracks with drum maps if the **Edit as Drums when Drum Map is assigned** option is activated.

Show Controllers

Governs whether non-note events such as controllers, etc. are shown in MIDI parts.

Note Brightness

Increases or decreases the brightness of note events.

Controller Brightness

Increases or decreases the brightness of controller events.

Edit as Drums when Drum Map is assigned

If this is activated, parts on MIDI tracks to which drum maps are assigned are shown with drum note symbols. The parts will automatically open in the **Drum Editor** on double-click. This overwrites the **Default Edit Action** setting.

Event Display - Chords

Pitch Notation

- The **Note Name** pop-up menu lets you select between three ways of displaying chords.

- The **Naming Format** pop-up menu lets you determine how MIDI note names (pitches) are displayed in editors, etc.

- The options **Display 'Bb' as 'B'** and **Display 'B' as 'H'** allow you to change the corresponding pitch names.

Chord Font

Allows you to specify a font for all chord symbols.

Chord Symbols

There are several ways of indicating chord types, for example, major and minor chords. These options allow you to select your preferred display method for major 7th chords, minor chords, half-diminished chords, diminished chords, and augmented chords.

Event Display - Tracks

Colorize Track Controls

This slider allows you apply the track color to the track controls. Drag the slider to the right to intensify the color.

Colorize Only Folder Track Controls

Activate this to restrict the effect of the **Colorize Track Control** function to folder tracks only. This is useful in projects with a large number of tracks and folder tracks.

Default Track Name Width

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

Auto Track Color Mode

This offers you several options for automatically assigning colors to tracks that are added to the project:

- **Use Default Track Color**
  New tracks get the default event color.

- **Use Previous Track Color**
  New tracks get the same color as the track above them in the track list.

- **Use Previous Track Color + 1**
  This is similar to the **Use Previous Track Color** option, except that the new tracks get the next color in the color palette.

- **Use Last Applied Color**
  New tracks get the color that you last applied to an event/part.

- **Use Random Track Color**
  Inserted tracks get random track colors.

General

The **General** page contains general settings that affect the program user interface. Set these according to your preferred work methods.

Language

Allows you to select which language is used in the program. After switching the language, you must restart the program for the change to take effect.

Auto Save

If this is activated, Cubase automatically saves backup copies of all open projects with unsaved changes. These are named `Name.bak`, where name is the name of the project, and are saved in the project folder. Backup copies of unsaved projects are named `#UntitledX.bak` where X is an incremental number, to allow multiple backup copies in the same project folder.

Auto Save Interval

Allows you to specify how often a backup copy is created.

Maximum Backup Files

Allows you to specify how many backup files will be created with the **Auto Save** function. When the maximum number of backup files is reached, the existing files will be overwritten (starting with the oldest file).

Show Tips

If this is activated and you position the pointer over an icon or button in Cubase, an explanatory tooltip is displayed after a second.

Maximum Undo Steps

Allows you to specify the number of undo levels.

Run Setup on Create New Project

If this is activated, Cubase automatically displays the **Project Setup** dialog every time you create a new project. This allows you to specify the basic project configuration.

Use Steinberg Hub

Activate this option to open Steinberg Hub when you start Cubase or create a new project using the **File** menu.

General - Personalization

Default Author Name

Allows you to specify an author name that is used by default for new projects. This will be included as metadata when exporting audio files with an iXML chunk.

Default Company Name

Allows you to specify a company name that is used by default for new projects. This will be included as metadata when exporting audio files with an iXML chunk.

MIDI

This page contains settings that affect MIDI recording and playback.

MIDI Thru Active

If this is activated, all MIDI tracks that are record enabled or have monitoring activated will "echo" incoming MIDI data, sending it back out on their respective MIDI outputs and channels. This allows you to hear the correct sound from your MIDI instrument during recording.

NOTE

If you use MIDI Thru, select **Local Off** mode on your MIDI instrument to prevent each note from sounding twice.

Reset on Stop

If this is activated, Cubase sends out MIDI Reset messages (including noteoff and controller resets) on stop.

Never Reset Chased Controllers

If this is activated, controllers are not reset to 0 when you stop playback or move to a new position in the project.

Length Adjustment

This allows you to enter a length adjustment value in ticks by which the notes that have the same pitch and MIDI channel are adjusted. This ensures that there is always a short time between the end of one note and the start of another. By default, there are 120 ticks per 1/16 note, but you can adjust this with the **MIDI Display Resolution** setting.

Chase Events

Event types for which an option is activated are chased when you locate to a new position and start playback. This makes your MIDI instruments sound as they should when you locate to a new position and start playback.

If **Chase not limited to Part Boundaries** is activated, MIDI controllers are also chased outside the part boundaries, and the chase is performed on the part touched by the cursor as well as on all the parts to the left of it. Deactivate this for very large projects, as it slows down processes such as positioning and soloing.

MIDI Display Resolution

This allows you to set the display resolution for viewing and editing MIDI data. This only affects how MIDI events are displayed and not how they are recorded.

Insert Reset Events after Record

If this is activated, a reset event is inserted at the end of each recorded part. This resets controller data, such as **Sustain**, **Aftertouch**, **Pitchbend**, **Modulation**, **Breath Control**. This is useful if you stop recording before the note off command is sent, for example.

MIDI Max. Feedback in ms

This allows you to set the maximum length of the notes when using **Acoustic Feedback** in MIDI editors.

MIDI - MIDI File

Export Options

These options allow you to specify what data is included in exported MIDI files.

Export Inspector Patch

If this is activated, the MIDI patch settings in the Inspector - Bank Select and Program Select (used for selecting sounds in the connected MIDI instrument) are included as MIDI Bank Select and Program Change events in the MIDI file.

Export Inspector Volume/Pan

If this is activated, Volume and Pan settings made in the Inspector are included as MIDI Volume and Pan events in the MIDI file.

Export Automation

If this is activated, the automation data (just as it is heard during playback) is converted to MIDI controller events and included in the MIDI file. Cubase Elements only: This also includes automation recorded with the MIDI Control plug-in.

Note that if a continuous controller (e.g. CC7) has been recorded but the Read button is deactivated for the automation track (i.e. the automation is effectively switched off for this parameter), only the part data for this controller will be exported.

If this option is deactivated and the Read Automation button is activated, no continuous controllers will be exported. If the Read button is deactivated, the controller data of the MIDI part are exported (these will now be handled like "regular" part data).

It is recommended to activate the "Export Automation" option.

Export Inserts

If this is activated, any MIDI modifiers that you have added will be included in the MIDI file.

Export Markers

If this is activated, any markers you have added will be included in the MIDI file as Standard MIDI File Marker events.

Export as Type 0

If this is activated, the MIDI file will be of Type 0 (all data on a single track, but on different MIDI channels). If you do not check this option, the MIDI file will be of Type 1 (data on separate tracks). Which type to choose depends on what you want to do with the MIDI file (in which application or sequencer it is to be used).

Export Resolution

You can specify a MIDI resolution between 24 and 960 for the MIDI file. The resolution is the number of pulses, or ticks, per quarter note (PPQ) and determines the precision with which you will be able to view and edit the MIDI data. The higher the resolution, the higher the precision. The resolution should be chosen depending on the application or sequencer with which the MIDI file will be used though, because certain applications and sequencers may not be able to handle certain resolutions.

Export Locator Range

If this is activated, only the range between the left and right locator will be exported.

Export includes Delay

If this is activated, any delay settings you have made in the **Inspector** will be included in the MIDI file.

NOTE

To include other **Inspector** settings, you must convert the settings to real MIDI events and properties by using the **Merge MIDI in Loop** function for each track.

NOTE

Exported MIDI files include the tempo and time signature events of the **Tempo Track Editor** or, if the tempo track is deactivated, the current tempo and time signature.

Import Options

These options allow you to specify what data is included in imported MIDI files.

Extract First Patch

If this is activated, the first Program Change and Bank Select events for each track are converted to Inspector settings for the track.

Extract First Volume/Pan

If this is activated, the first MIDI Volume and Pan events for each track are converted to Inspector settings for the track.

Import Controller as Automation Tracks

If this is activated, MIDI controller events in the MIDI file will be converted to automation data for the MIDI tracks. If this is deactivated, controller data for the MIDI parts will be imported.

Import to Left Locator

If this is activated, the imported MIDI file will be placed so that it starts at the position of the left locator - otherwise it will start at the beginning of the project. Note that if you choose to have a new project created automatically, the MIDI file will always start at the beginning of the project.

Import Markers

If this is activated, any markers that have been added are imported with the MIDI file.

Import dropped File as single Part

If this is activated and you drag and drop a MIDI file into the project, the whole file will be placed on a single track.

Ignore Master Track Events on Merge

If this is activated and you import a MIDI file into the current project, tempo track data in the MIDI file is ignored. The imported MIDI file will play according to the current Tempo track in the project.

If this option is deactivated, the Tempo Track Editor will be adjusted according to the tempo information in the MIDI file.

Auto Dissolve Format 0

If this is activated and you import a MIDI file of type 0 into the project, the file will automatically be "dissolved": For each embedded MIDI channel in the file, a separate track will be inserted in the Project window.

If this is deactivated, only one MIDI track will be created. This track will be set to MIDI Channel "Any", allowing all MIDI events to play back on their original channels. You can also use the "Dissolve Part" function on the MIDI menu to distribute the events onto different tracks (or lanes) with different MIDI Channels at a later stage.

Destination

This allows you to specify what happens when you drag a MIDI file into the project:

- Select **MIDI Tracks** to create MIDI tracks for the imported file.

- Select **Instrument Tracks** to create instrument tracks for each MIDI channel in the MIDI file and let the program automatically load appropriate presets.

- Select **HALion Sonic SE multi-timbral** to create several MIDI tracks, each routed to a separate instance of HALion Sonic SE in the **VST Instruments** window and load the appropriate presets.

NOTE

In Cubase LE, this is automatically set to **MIDI Tracks**.

Import Karaoke Lyrics as Text

Activate this to convert karaoke lyrics in the MIDI file to text that can be displayed in the **Score Editor**. If this 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 four sections:

Record

Activating any of these options prevents the corresponding type of MIDI message from being recorded. It will, however, be thruput, and if already recorded, it will play back normally.

Thru

Activate any of these options to prevent the corresponding type of MIDI message from being thruput. It will, however, be recorded and played back normally.

Channels

If you activate a Channel button, no MIDI messages on that MIDI Channel will be recorded or thruput. Already recorded messages will however be played back normally.

Controller

Allows you to prevent certain MIDI controller types from being recorded or thruput.

To filter out a controller type, select it from the list at the top of the section and click "Add". It will appear in the list below.

To remove a controller type from the list (allow it to be recorded and thruput), select it in the lower list and click "Remove".

MediaBay

Scan unknown File Types

Activate this to open and scan any file in the search location and ignore files that cannot be recognized.

Maximum Items in Results List

This allows you to specify the maximum number of files that are displayed in the **Results** list. This helps you to avoid unmanageably long lists of files in the **Results** list.

Show File Extensions in Results List

Activate this to display file name extensions in the **Results** list.

Scan Folders only when MediaBay is open

Activate this to scan Cubase for media files when the **MediaBay** window is open. Otherwise, the folders are scanned in the background even when the **MediaBay** window is closed.

NOTE

During playing back or recording no folder scans are performed.

Metering

Map Input Bus Metering to Audio Track (in Direct Monitoring)

This allows you to map the input bus metering to monitor-enabled audio tracks, giving you the opportunity to watch the input levels of your audio tracks when working in the **Project** window. For this to work, activate **Direct Monitoring** in the **Device Setup** dialog.

- If this option is activated, audio tracks show the metering signal from the input bus to which they are routed as soon as the track is monitor-enabled. Note that the tracks are mirroring the input bus signal, that is, you will see the same signal in both places. When using mapped metering, any functions, such as trimming, that you apply to the audio track are not reflected in its meters.

- If this option is not activated, metering works as usual.

Meters' Peak Hold Time

This allows you to specify for how long the peak levels are held in the meters. For this to work, deactivate **Meters - Hold Forever** in the **MixConsole**.

Meters' Fallback

This allows you to specify how quickly the meters in the **MixConsole** return to lower values after signal peaks.

Metering - Appearance

On this page you can assign colors to level meter values to quickly identify what levels are reached. You can adjust the colors for the channel meter or the master meter. For the master meter you can only make changes for the **Digital Scale** scaling mode. Changes take effect when you click **Apply** or **OK**.

To adjust the levels and colors, activate the channel meter or master meter option and proceed as follows:

- To specify the level for a color change, double-click a handle to the right of the meter scale and enter the level (dB) value. Note that for dB values less than 0, you must add a minus sign before the entered number. You can also click a handle and drag it to a specific level. Press [Shift] for more accurate positioning. Alternatively, you can nudge with the Arrow Up/Down keys. Press [Shift] for faster positioning.

- To assign a color, click the upper or lower part of a handle so that a black frame is shown, and use the color selector pane to select a color. Selecting the same color for the upper and lower part of the handle results in a meter that changes its colors gradually, while different colors indicate level changes even more precisely.

- To add more color handles, click the **Add** button, or [Alt]/[Option]-click at a level position to the right of the meter scale. Each new handle is automatically associated with a default color.

- To remove a handle, select the handle and click the **Remove** button, or [Ctrl]/[Command]-click the handle.

Record

This page contains settings related to audio and MIDI recording. Select one of the available entries.

Record - Audio

Audio Pre-Record Seconds

This allows you to specify for how many seconds any incoming audio you play is captured in buffer memory during playback or in stop mode.

When Recording Wave Files larger than 4GB

This allows you to specify what happens if you record Wave files that are larger than 4 GB.

- To split the Wave file, activate **Split Files**.
  Use this, if you work on a FAT32 file system that supports only file sizes up to 4 GB.

- To save the Wave file as RF64 file, activate **Use RF64 Format**.
  RF64 files use the `.wav` extension. However, they can only be opened with an application that supports the RF64 standard.

Create Audio Images During Record

If this option is activated, Cubase calculates the waveform image and displays it during the actual recording process.

NOTE

This realtime calculation uses some extra processing power.

Record - Audio - Broadcast Wave

This page allows you to specify the **Description**, **Author**, and **Reference** text strings that are embedded in recorded Broadcast Wave files. The settings you make here also appear as default strings in the **Broadcast Wave Chunk** dialog when you export files to certain formats (not only Broadcast Wave files can contain embedded information, but also Wave, Wave 64, and AIFF files).

Record - MIDI

Record-Enable allows MIDI Thru

Activate this option if you do not want record-enabled MIDI or instrument tracks to echo incoming MIDI data. This prevents hearing doubled notes on record-enabled tracks to which a VST instrument is assigned.

Snap MIDI Parts to Bars

Activate this to lengthen recorded MIDI parts automatically to start and end at whole bar positions. If you are working in a Bars+Beats-based context, this can make editing (Moving, Duplicating, Repeating, etc.) easier.

Solo Record in MIDI Editors

Activate this to automatically Record Enable a track when you open a part for editing in a MIDI editor. For all other MIDI tracks Record Enable is deactivated until you close the editor again.

This makes it easier to record MIDI data when you edit a part – you will always be sure the recorded data ends up in the edited part and not on any other track.

MIDI Record Catch Range in ms

When you record starting at the left locator, this setting helps you make sure that the very start of the recording is included. If you raise the Record Catch Range, Cubase will catch the events played just before the recording start point, eliminating this problem.

Retrospective Record

When this is activated, the program captures MIDI input in buffer memory, even when not recording. The contents of the buffer memory can then be retrieved and turned into a MIDI part on a record enabled MIDI track. This therefore allows you to capture any MIDI notes you play in stop mode or during playback and later turn them into a recorded MIDI part.

Use the "Retrospective Record Buffer Size" setting to determine how much MIDI data can be captured in the buffer.

ASIO Latency Compensation Active by Default

This determines the initial state of the "ASIO Latency Compensation" button in the track list for MIDI or instrument tracks.

If you record live on a VST instrument, you usually compensate the latency of your audio card by playing too early. In consequence, the timestamps are recorded too early. By activating this option, all recorded events are moved by the current latency, and playback sounds like during the recording situation.

Replace Recording in Editors

This affects the result of recording in a MIDI editor when Replace Mode is selected (Linear Record Mode on the Transport panel):

- **None**
  Nothing is replaced, even though Replace Mode is selected.

- **Controller**
  Only controller data is replaced, not notes.

- **All**
  Replace mode works as usual - notes and controllers are replaced when recording.

Transport

This page contains options related to playback, recording and positioning.

Playback Toggle triggers Local Preview

When this option is activated, you can use the [Space bar] on your keyboard to start/stop "local" playback of the selected file in the Sample Editor or the Pool.

When the Sample Editor is not open or when there is no audio file selected in the Pool, the [Space bar] still toggles the "global" project playback.

If this option is deactivated, the [Space bar] is used to start/stop playback of the project.

Zoom while Locating in Time Scale

If this option is activated, you can zoom in or out by clicking in the Ruler and dragging down or up.

Cursor Width

Adjusts the width of the Project Cursor line.

Return to Start Position on Stop

If this option is activated and you stop playback, the project cursor automatically returns to the position where recording or playback last started.

If this option is deactivated and you stop playback, the project cursor remains at the position where you stop playback.

If you click **Stop** again, the project cursor returns to the position where recording or playback last started.

Deactivate Punch In on Stop

If this is activated, Punch In on the Transport panel is automatically deactivated whenever you enter Stop mode.

Stop after Automatic Punch Out

If this is activated, playback will automatically stop after automatic Punch Out (when the Project Cursor reaches the Right Locator and Punch Out is activated on the Transport panel). If the Post-roll value on the Transport panel is set to a value other than zero, playback will continue for the set time before stopping.

Stop playback while winding

You can use the winding functions during playback. When this option is activated, audio playback is stopped as soon as you click the Rewind or Fast Forward buttons on the Transport panel.

When this option is deactivated, audio playback will continue until you release the Rewind or Fast Forward button.

Wind Speed Options

These options affect the fast forward/rewind speed.

- If **Adjust to Zoom** is activated, the wind speed will be adapted to the horizontal zoom factor.
  If you zoom in very close for detailed editing, you probably do not want to have a high fast forward/rewind speed. Because of this, the **Speed Factor** does not have any effect in this mode. The **Fast Wind Factor** still applies though.

- If **Fixed** is activated, the wind speed will always be the same regardless of the horizontal zoom factor.

- Use the **Speed Factor** option to set the wind speed. You can set a value between 2 and 50. The higher the value, the faster the wind speed will be.
  If **Adjust to Zoom** is activated, this has no effect.

- Use the **Fast Wind Factor** to set the wind speed multiple for fast winding.
  If you press [Shift] while fast forwarding or rewinding, the wind speed will increase. The increase in speed is a multiple of the **Speed Factor**. Meaning that if you set the **Fast Wind Factor** to 2, the wind speed will be twice as fast. If you set it to 4, the wind speed will be four times as fast, etc. You can set a value between 2 and 50.

Show Timecode Subframes

If this is activated, all frame based display formats (".fps" and ".dfps") will also show subframes. There are 80 subframes per frame.

Stationary Cursors

If this option is activated, the Project cursor will be positioned in the middle of the screen (if possible), and the window will scroll continuously during playback (instead of moving from one "page" to the next).

Locate When Clicked in Empty Space

When this is activated, you can move the Project Cursor by clicking anywhere in an "empty" area of the Project window.

Transport - Scrub

Scrub Volume

This lets you set the playback volume for the Scrub function in the Project window and audio editors.

Use High Quality Scrub Mode

When you activate this option, effects are enabled for scrubbing and the resampling quality is higher. However, scrubbing will be more demanding on the processor.

Use Inserts While Scrubbing

When you activate this option, you can activate insert effects for scrubbing with the shuttle speed control. By default, insert effects are bypassed.

VST

This page contains settings for the VST audio engine.

Connect Sends automatically for each newly created Channel

When this option is enabled, creating a new audio or group channel will automatically connect the send routing for existing FX channels. Note that this option is disabled by default to save memory resources.

Instruments use Automation Read All and Write All

If you deactivate this option, the Read and Write automation status in VST instrument panels are not affected by the "Activate/Deactivate Read for All Tracks" and "Activate/Deactivate Write for All Tracks" automation switches.

Mute Pre-Send when Mute

If this is activated, sends set to "Pre-fader" mode will be muted if you mute their channels.

Default Send Level

This allows you to specify a default level for your send effects.

Group Channels: Mute Sources as well

By default, when you mute a group channel no audio will pass through the group. However, other channels that are routed directly to that group channel will remain unmuted. If any of those channels have cue sends routed to other group channels, FX channels or output busses, those will still be heard.

If **Group Channels: Mute Sources as well** is activated, muting a group channel will cause all other channels directly routed to it to be muted as well. Pressing mute again will unmute the group channel and all other channels directly routed to it. Channels that were muted prior to the group channel being muted will not remember their mute status and will be unmuted when the group channel is unmuted.

NOTE

Group Channels: Mute Sources as well does not affect how mute automation is written. Writing mute automation on a group channel only affects the group channel and not channels routed to it. When writing the automation you will see the other channels being muted when this option is checked. However, upon playback, only the group channel will respond to the automation.

Delay Compensation Threshold (for Recording)

Cubase features full delay compensation - any delay inherent in the VST plug-ins you use will automatically be compensated for during playback. However, when you play a VST instrument in realtime or record live audio (with monitoring through Cubase activated), this delay compensation may result in added latency. To avoid this, you can click the Constrain Delay Compensation button on the Project window toolbar. This function tries to minimize the latency effects of the delay compensation, while maintaining the sound of the mix as far as possible.

The Delay Compensation Threshold setting is a kind of "tolerance" setting for the Constrain Delay Compensation function - only plug-ins with a delay higher than this threshold setting will be affected by the Constrain Delay Compensation function. By default, this is set to 0.0 ms, which means that all plug-ins will be affected (e.g. turned off) when you activate Constrain Delay Compensation. If you feel that a little latency is acceptable, you can raise this threshold value.

Auto Monitoring

Determines how Cubase handles monitoring (listening to the input signal during recording). The following options are available:

- **Manual**
  This option allows you to turn input monitoring on or off by clicking the monitor button in the track list, Inspector, or MixConsole.

- **While Record Enabled**
  With this option you will hear the audio source connected to the channel input whenever the track is record enabled.

- **While Record Running**

  This option switches to input monitoring only during recording.

- **Tapemachine Style**

  This option emulates standard tapemachine behavior: input monitoring in Stop mode and during recording, but not during playback.

NOTE

The automatic monitoring options apply when you are monitoring through Cubase, or when you are using ASIO Direct Monitoring. If you are monitoring externally (listening to the input signal from an external mixer, for example), select the "Manual" mode and keep all audio monitor buttons turned off in Cubase.

Warn on Processing Overloads

When you activate this option, a warning message is displayed as soon as the CPU overload indicator (on the Transport panel) lights up during recording.

VST - Plug-ins

Warn Before Removing Modified Effects

If this is activated, a dialog will appear whenever you remove an effect plug-in for which you have made parameter changes, asking for confirmation as to whether you really want to remove the effect.

If you do not want this dialog to appear and modified effects to be removed without confirmation, leave this option deactivated.

Open Effect Editor after Loading it

When this is activated, loading an effect or VST instrument (e.g. in one of the plug-in slots of the Send or Insert sections) will automatically open the control panel for the plug-in.

Create MIDI track when loading VSTi (not in Cubase LE)

This pop-up menu allows you to what specify happens when you add a VSTi in the VST Instruments window. The following options are available:

- **Always**

  When this is selected, a corresponding MIDI track will always be created when you add a VST instrument.

- **Do not**

  When this is selected, no MIDI track will be created when you add a VSTi in the VST Instruments window. This is the behavior from earlier versions of Cubase.

- **Always ask to**

  When this is selected, you will be asked whether a corresponding MIDI track is created when you add a VSTi in the VST Instruments window.

Suspend VST3 plug-in processing when no audio signals are received

When this is activated, VST plug-ins will not consume any CPU power during "silent" passages, i.e. when no audio is passing through them. This can improve system performance noticeably.

NOTE

Note however that this might lead to situations where you loaded more plug-ins in Stop mode than the system will be able to play back simultaneously. As a safety measure, try playing back the part of your project which contains the largest number of audio events to make sure that your computer system can handle the current number of VST plug-ins.

Synchronize Plug-in Program Selection to Track Selection

If you route multiple MIDI tracks to multi-timbral instruments and activate this option, track selection and plug-in program selection are synchronized.

Plug-in Editors "Always on Top"

When this is activated, the control panels for effect plug-ins and VST instruments will always be shown on top of other windows.

Video

Extract Audio on Import Video File

If this option is activated and you import a video file, the audio data of the video is automatically extracted and saved as a separate audio clip.

Thumbnail Memory Cache Size

The value entered here determines how much memory is available for displaying thumbnails. The currently shown image of a video is buffered in the thumbnail memory cache. Whenever you move to another image and there is no memory capacity left, the "oldest" picture in the cache is replaced by the current one. If you have long video clips and/or work with a large zoom factor, you may have to raise this value.

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