



New Features in Cubase 5.5



CUBASE 5

Advanced Music Production System



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Introduction

Welcome!

Welcome to Cubase 5.5! This free update to Cubase 5 is packed with new features and improvements across several application areas. Most of these are direct results of the Nuendo 5 development that we do not want to withhold from Cubase 5 – the introduction of a completely redesigned MediaBay or the new Video Engine with OpenGL support to name a few. This document lists and describes features that have been added or changed since the release of Cubase 5.0. Some chapters known from the previous documentation have been completely rewritten and are therefore included in their entirety, e.g. for the Sample Editor, where many detail changes can be found. Please take some time to read through this documentation for the full scope of all these improvements. It will help you getting the most out of Cubase 5.5.

This version is compatible with Apple Mac OS X Snow Leopard (10.6) and Microsoft Windows 7.

About the program versions

The documentation covers two different operating systems or “platforms”; Windows and Mac OS X.

Some features and settings are specific to one of the platforms. This is clearly stated in the applicable cases. In other words:

⇒ If nothing else is said, all descriptions and procedures in the documentation are valid for both Windows and Mac OS X.

Key command 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] under Windows and [Command]-[Z] under 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] under Windows or [Command] under Mac OS X, then press [Z]”.

Similarly, [Alt]/[Option]-[X] means “press [Alt] under Windows or [Option] under Mac OS X, then press [X]”.

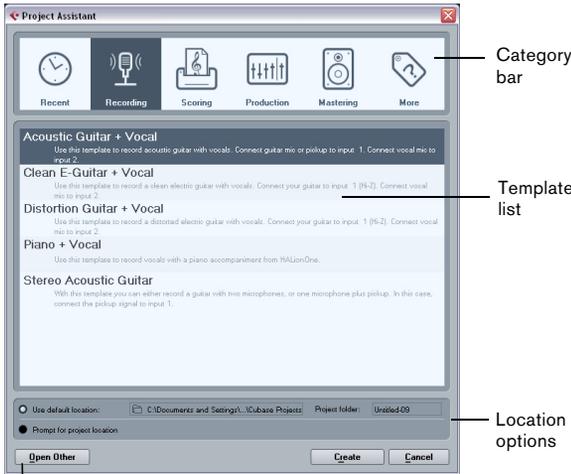
⇒ Please note that this manual might refer to right-clicking, e.g. to open context menus. If you are using a Mac with a single-button mouse, hold down [Ctrl] and click.

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Working with the new features

The Project Assistant dialog

The Project Assistant dialog is opened by selecting the “New Project...” command on the File menu. In this dialog you can access recently opened projects and create new projects, which can either be empty or based on a template.



Open Other button

The Project Assistant dialog will also open in the following cases:

- If you launch Cubase with the option “Show Project Assistant” selected on the “On Startup” pop-up menu in the Preferences (General page).
- If you hold down [Ctrl]/[Command] while launching Cubase.

Opening recent projects

The Recent category in the category bar of the Project Assistant dialog contains a list of recently opened projects. When you select an item in this category, the Create button changes to “Open”, allowing you to open the corresponding project. This list is similar to the list in the Recent Projects submenu on the File menu.

Choosing a template

In the category bar of the Project Assistant dialog, the available factory templates are sorted into the predefined categories Recording, Production, Scoring, and Mastering. Furthermore, there is a More category which contains the default project template and all templates that are not assigned to any of the other categories.

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

- To create an empty project that is not based on a template, select the “Empty” entry in the More category and click the Create button.

An empty project is also created if no template is selected in the currently shown category.

- You can rename or delete a template by right-clicking it in the list and selecting the corresponding option on the context menu.

Choosing a project location

The options in the lower part of the dialog allow you to specify where the project is stored.

- Select “Use default location” to create the project in the default project location (as shown in the path field), and click Create.

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 will reside in a folder named “Untitled”.

⇒ To change the default project location, simply click in the path field. A file dialog opens, allowing you to specify a new default location.

- Select “Prompt for project location” and click Continue to create the project in a different location.

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

Open Other

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

Handling project templates

Saving templates

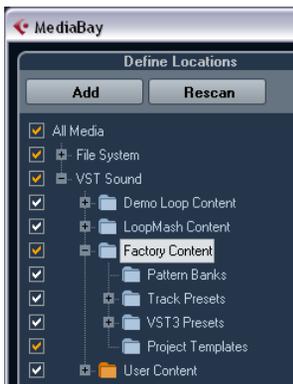
The “Save as Template” dialog now has an Attribute Inspector section, where you can assign the template to one of the template categories shown in the Project Assistant dialog and/or enter a description for the template. This description will also be visible in the Project Assistant dialog.

- Simply select a category value from the Template Category pop-up menu and/or enter a description in the Content Summary field.

⇒ If you do not choose a Template Category attribute, the new template will be shown in the More category in the Project Assistant dialog.

Showing and tagging project templates in the MediaBay

The VST Sound node in the Define Locations section provides a shortcut to the included project templates. These can be found inside the Factory Content folder. If you save your own project templates using the “Save as Template” dialog, these can be found in the User Content node.



For more information about attributes, see [“The Attribute Inspector”](#) on page 30.

General editing improvements

New event selection option

There is a new option on the Select submenu of the Edit menu called “Events under Cursor”. It automatically selects all events on the selected tracks that are “touched” by the project cursor.

Zooming with the mouse wheel

You can now press [Ctrl]/[Command] and turn the mouse wheel to zoom in on or out of the current mouse pointer position.

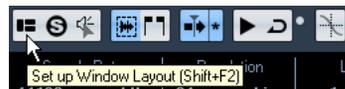
User interface improvements

Consolidated toolbars

The toolbars in the Project window, the Sample Editor, and the MIDI editors have been slightly redesigned and now present a consolidated look and feel. Some items were regrouped to move elements belonging together closer to each other.

The Set up Window Layout button

The toolbars now feature a “Set up Window Layout” button that allows you to show or hide various window elements, such as the info line. There are no longer individual buttons to show or hide these elements.



When you click the “Set up Window Layout” button, a transparent pane appears, covering the window. In the center of it is a gray area containing checkboxes for the different elements. In this pane, activate or deactivate the elements that you want to see or hide (respectively).



⇒ In the Key Editor and Drum Editor, this button is named “Show Info Line”. Use it to directly hide or show the info line.

The Select Color pop-up menu

The Color Selector and the small color strip below the Color tool have been merged into a single pop-up menu.

New look for Add Track dialogs

The Add Track dialog has a new design that fits in with the new look and feel of the MediaBay. It is described in detail in the section [“Working with MediaBay-related windows”](#) on [page 35](#)).

Redesign of the info line

The appearance of the info line in the Project window and all editors was enhanced to improve readability. It shows the same information as before.

Redesign of the Edit History dialog

The Edit History dialog has a new look and feel. It works as before with the only difference that it is now set to stay “always on top”.

Enhanced editing in the VST Connections window

On the different tabs of the VST Connections window, the corresponding busses or channels are shown in a table containing a tree view with expandable entries. When you have set up all the required busses for a project it might be necessary to edit the names and/or change port assignments. Cubase provides a number of new features to make such tasks easier.

Determining how many busses a device port is connected to

To give you an idea how many busses a given port is already connected to, the busses are shown in square brackets on the Device Port pop-up menu, to the right of 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 far right.

Therefore if you see the following:

Adat 1 [Stereo1] [Stereo2] [Stereo3] (+2)...

this means that the Adat 1 port is already assigned to three stereo busses plus two additional busses.

Identifying exclusive port assignments

In some cases (i.e. for certain channel types such as Studio channels) the port assignment is exclusive. Once a port has been assigned to such a bus or channel, it should not be assigned to another bus since the assignment to the first bus is broken in that case.

To help you identify such exclusive port assignments and avoid accidental reassignment, the corresponding ports are marked in red on the Device Port pop-up menu.

Selecting/Deselecting multiple entries

- Using the key commands [Ctrl]/[Command]-[A] (Select All) and [Shift]-[Ctrl]/[Command]-[A] (Select None) you can select or deselect all entries in the Bus Name column. Note that for this to work the table on the current tab needs to have the focus. This can be achieved by clicking anywhere on the background of the table.

- By holding [Shift] when selecting entries in the Bus Name column, you can select multiple entries at the same time. This is useful for automatic renaming or changing the port assignments globally, see below.

⇒ If you select a subentry (e.g. a speaker channel in a bus) the parent entry is automatically selected as well.

Selecting entries by typing the name

In the Bus Name list you can jump to an entry by typing the first letter of the bus name on the keyboard.

⚠ This will only work if the table has the focus. To do this, simply select any list entry.

Navigating the Bus Name list using the [Tab] key

By pressing the [Tab] key you can jump to the next entry in the Bus Name list, allowing you to rename your busses quickly. Similarly, by pressing [Shift]-[Tab] you can return to the previous list entry.

Automatically renaming selected busses

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

- 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 renamed automatically.

- To use letters from the alphabet, proceed as with numbers, but enter a capital letter instead of a number.

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 to be used is Z. If you have more selected entries than there are letters available, the remaining entries will be skipped.

⚠ When using letters instead of numbers, it is important to note that these must be preceded by a space. If you leave out the space before the letter or if you do enter neither a letter nor a number, only the first selected entry is renamed.

⇒ You do not have to begin renaming with the topmost selected entry. The renaming will start from the bus where you edit the name, will go down the list to the bottom and then continue from the top until all selected busses have been renamed.

Changing the port assignment for multiple busses

To change the port assignment (or the output routing in case of groups/FX channels) for multiple entries in the Bus Name column at the same time, you need to select the corresponding busses first.

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

⚠ Exclusive ports (e.g. ports already assigned to Control Room channels) will be skipped!

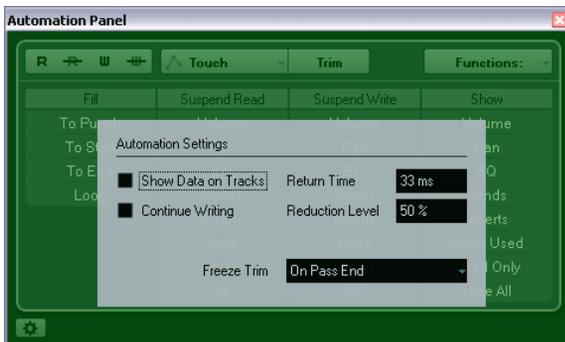
- To assign the same port to all selected busses, press [Shift]-[Alt]/[Option], open the Device Port pop-up menu for the first selected entry (i.e. the topmost bus) and select a device port.

⇒ Using this procedure, you can also set all selected busses or channels to Not Connected.

New and improved automation features



The automation panel was slightly redesigned and expanded so that you will now find a few familiar functions in a different place (e.g. the Global Automation Mode pop-up menu, the Trim button and the Functions pop-up menu). The “Return Time”, and “Reduction Level” settings can now be found in the Automation Preferences, opened by clicking the corresponding button in the lower left corner of the panel. Here you will also find the “Show Data on Tracks” and “Continue Writing” (previously “Allow Continue Writing after Transport Jump”) options, previously found on the Options pop-up menu.

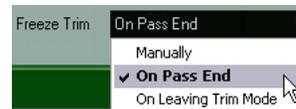


Trim improvements

When enabling Trim on the Automation panel, a trim curve is now positioned in the exact middle position of your automation track. You can use the trim curve to modify the original automation curve. Just drag the trim curve up or down and add automation events to it. These increase or decrease the values of the original automation curve, but allow you to preserve the original data.

You can now freeze your trim curve automatically or manually and render all trim data into a single automation curve.

To freeze your trim curve automatically, open the Freeze Trim pop-up menu in the Automation Preferences, and select one of the following options: Use “On Pass End” to perform a freeze whenever a write operation is finished, or “On Leaving Trim Mode” to freeze the trim data when Trim mode is switched off.

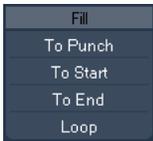


To freeze your trim curve manually, select the Manually option on the Freeze Trim pop-up menu in the Automation Preferences. You have the following possibilities to freeze your trim data manually:

- On the automation track, click on the parameter name and select the “Freeze Trim” option from the pop-up menu to freeze a specific parameter of one track.
- Open the Functions pop-up menu on the Automation panel and select “Freeze All Trim Automation in Project” to freeze all tracks in the project.
- Open the Functions pop-up menu on the Automation panel and select “Freeze Trim Automation of Selected Tracks” to freeze all selected tracks.

The Fill options

The automation panel now features an additional Fill section.



The Fill options define what happens in a specific section of your project when you punch out of a running automation pass.

The Fill options write one particular value across a defined section of your automation track – any previously created data within this section is overwritten.

The following Fill options are available:

To Punch

Let's say you are rolling, in realtime, over a scene cut and volume must be softer in the next scene – you do not yet know how much softer, but the change in volume from the first to the second scene must be abrupt.

1. Select "Touch" as automation mode and click the "To Punch" button once to activate it as Fill option.

The "To Punch" button is highlighted.

2. Start rolling somewhere during the first scene and touch the fader at the moment of scene change.

The automation pass is punched in.

3. Move the fader until you have found the volume setting you need in the second scene and release the fader to punch out.

The volume curve is set from the point of punch out back to where you punched in. The values written while moving the fader to find the right value are deleted, and the volume jumps at exactly the right moment from the value set in the first scene to the value found for the second scene.

To Start

"To Start" is similar to the "To Punch" option, but with the following difference: When "To Start" is selected, punching out of automation will fill the automation track from where you punched out to the start of the project.

To End

Imagine you are automating volume for the background tracks of a two-minute scene. Rather than holding the fader for two minutes, you can proceed as follows:

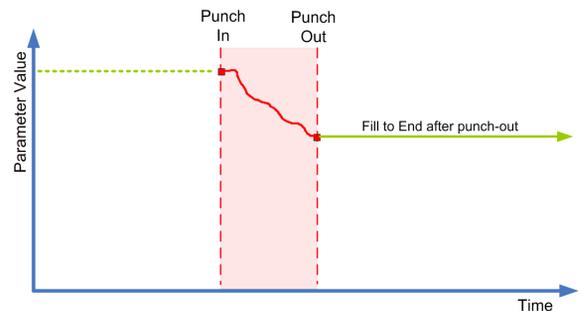
1. Select "Touch" as automation mode and click the "To End" button once to activate it as Fill option.

The "To End" button is highlighted.

2. Start rolling and touch the parameter control to punch in the automation pass.

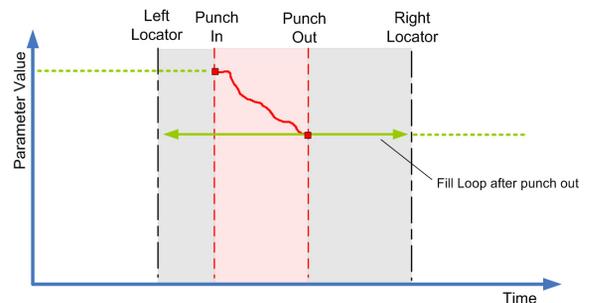
3. Move the fader until you have found the setting you want and release the fader.

This will punch out the writing of automation data. As you let go of the fader, the automation curve will take the found value setting, from where you punched out to the end of the project.



Loop

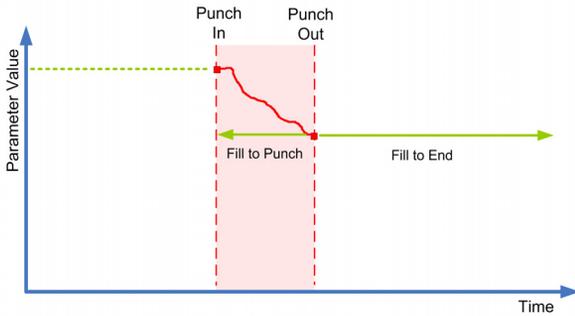
To use the Loop option, you must first set up a loop range with the left and right locators. When you then select Loop, punching out will set the found value within the range defined by the left and right locator.



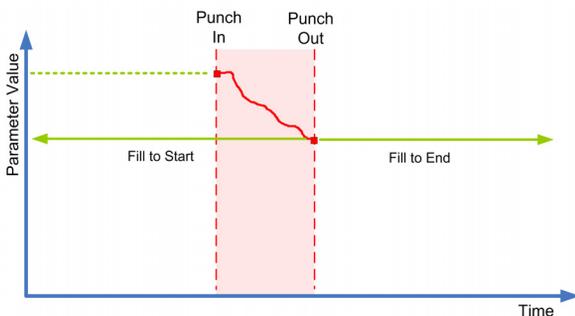
Fill combinations

You can also combine the various Fill options.

- Combining “To Punch” and “To End” will fill the automation track from the punch in position to the end of the project.



- Combining “To Start” and “To End” will fill the automation track from the beginning to the end of the project.



One shot vs. continuous fill

The Fill options can be used in two different ways:

- When you click one of the Fill buttons, it is highlighted, and will be enabled during the next automation pass. Afterwards, the option is disabled again.
- If you click a Fill button a second time, a lock symbol is displayed on the highlighted button, indicating that you are permanently in “Fill to X” mode and that the operation can be repeated as many times as you wish. Clicking the button a third time disables the corresponding Fill option.

Drawing curves with Fill enabled

You can use the Fill options on the Automation panel in combination with the Pencil tool. This provides you with an extremely powerful method for writing automation data manually:

1. Open an automation track and select the Pencil tool.
2. On the Automation panel in the Fill column select “To End”.
3. Click and draw to create an automation curve.
4. Release the mouse button.

At the moment of release, a final automation event is created. The automation curve is written from this last event through to the end of the project.

This procedure can be used with all the Fill options.

Project Synchronization Setup dialog improvements

The Project Synchronization Setup dialog has been optimized to make the relationships between the different elements involved in synchronization more evident. The arrows now clearly indicate the sources and destinations in the information/signal flow. Furthermore, some of the descriptions have been renamed to make them more consistent and easier to understand.

Export Audio Mixdown improvements

New naming options

The Export Audio Mixdown dialog now has an additional button in the File Location section. Clicking the “Naming Scheme...” button opens a separate pop-up window.



Here you can choose a number of elements that will be combined to form the file name. Depending on the settings in the Channel Selection section, the following elements are available: Name, Mixer Index, Channel Type, Channel Name, and Project Name.

The elements are defined as follows:

Element	Description
Name	The name that you entered in the Name field (in the File Location section).
Mixer Index	The number of the Mixer channel.
Channel Type	The type of audio-related channel that is being exported.
Channel Name	The name of the exported channel.
Project Name	The name of the Cubase project.

⇒ By combining the available naming elements, you can make sure that all the files of a batch are exported with unique names. If you have set up a naming scheme that would result in identical file names, a warning message appears when you click the Export button.

- To add an element, press the “+” button on the far right, and to remove an element from the naming scheme, click the corresponding “-” button.

You can also remove an element by dragging it out of the Elements section.

- To rearrange the sequence, simply click on an element and drag it to a different position.
- To choose a different element for a certain position, click on the element name and select a new entry from the pop-up menu.

Each element can only be used once in a naming scheme. The pop-up menu therefore shows only those elements that are still available.

Below the Elements section you will find some additional options:

Option	Description
Separator	Allows you to enter any character sequence to be used as a separator between the naming elements (e.g. a hyphen enclosed in spaces).
Leading Zeros	This controls how many leading zeros the Counter and Mixer Index components will have. For example, if you set this to “2”, the numbers from 1 to 10 will be written as 001 to 010.
Counter Start Value	Here you can enter a number that is used as the first Counter value.

⇒ To close the Naming Scheme pop-up window, simply click anywhere outside the pop-up window. The generated name will now also be shown to the right of the “Naming Scheme...” button.

New L/R channels option

The “L/R Channels” option in the Audio Engine Output section allows you to export only the left and right sub-channels of a multi-channel bus into a stereo file.

⇒ The Update Display option was moved to the bottom of the dialog.

New Import into Project option

The Import into Project section contains 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.

Now, there is also a “Pool Folder” text field, where you can specify in which Pool folder the clip will reside.

Gain inverse for channel EQ

Each EQ module (in the VST Channel Settings window or the Inspector) now features a button to invert the corresponding EQ band (i.e. reflect the curve along the x axis). This button is located to the right of the EQ module’s On/Off button. The button is hidden when the EQ module is deactivated.

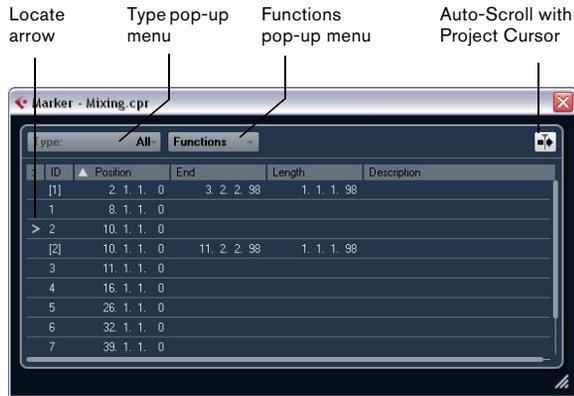
This is very useful if you want to filter out unwanted noise. While looking for the frequency to omit, it sometimes helps to boost it in the first place (set the filter to positive gain). After you have found the frequency, you can use the Inverse button to cancel it out.

Support for HD frame rates

Cubase can now synchronize to 23.97fps and other HD frame rates, allowing you to work with video material delivered in HD video formats. The new frame rates in the Project Setup window are 23.9fps, 24.9fps, 59.9fps, and 60fps. For more information, see “Frame rates” on [page 71](#).

Redesign of the Marker window

While the display of the markers on the Marker track has been refreshed for enhanced clarity, the Marker window has been completely redesigned:



In the Marker 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 Marker window, you have the following possibilities:

- Open the Project menu and select “Markers”.
- Click the Show button in the marker section on the Transport panel.
- Use the corresponding key command (by default [Ctrl]/[Command]-[M]).

The Type pop-up menu

- By selecting an entry from the Type pop-up menu, you select which markers (position markers, cycle markers, or all) are shown in the marker list.

Adding, moving, and removing markers

- To select a marker, click on it in the Marker window.
- To edit a selected marker, click on it.

Select multiple markers by [Shift]-clicking or [Ctrl]/[Command]-clicking them.

- To add a position marker, open the Functions pop-up menu and select the “Insert Marker” option.

A position marker is added at the current project cursor position on the marker track.

- To add a cycle marker, open the Functions pop-up menu and select the “Insert Cycle Marker” option.

This adds a cycle marker between the left and right locators on the marker track.

- To move one or more markers to a specific position, set the project cursor to the desired position, select the markers, and select the “Move Markers to Cursor” option from the Functions pop-up menu.

You can also move markers by entering 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 the “Remove Marker” option from the Functions pop-up menu.

Auto-Scroll with Project Cursor

This option helps you to keep track of the locate arrow, even if your project contains a large number of markers. When this option is activated, the window is automatically scrolled to keep the locate arrow visible.

Navigating in the marker list

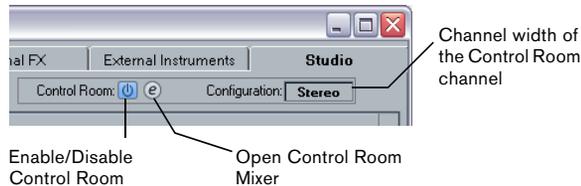
You can navigate in the marker list using your computer keyboard and select entries by pressing [Enter]. This is a quick and easy way to jump to markers during playback or recording:

- To move to the previous/next marker in the list, press [Up Arrow]/[Down Arrow].
- To jump to the first/last marker, press [PageUp]/[PageDown].

Control Room improvements

Improved Studio tab in VST Connections window

The Studio tab in the VST Connections window has been slightly redesigned. The new Configuration field indicates the channel width of the Control Room channel.



New button to open the Control Room Mixer

The Control Room Mixer can now be opened via the VST Connections window (Studio tab) or by clicking the Open Control Room Mixer button on the Project window toolbar.



⇒ If this button is not visible on the toolbar, activate the “Media & Mixer Windows” option on the context menu of the toolbar.

Exclusive Device Ports for Monitor Channels

In the Preferences dialog (VST-Control Room page) there is a new preference named “Exclusive Device Ports for Monitor Channels”. When this option is activated, the port assignment for Monitor channels is exclusive. If your scenario does not require you to assign ports to several Monitor channels, it is recommended to activate this option. This way, you can make sure that you do not accidentally assign ports to inputs/outputs and Monitor channels at the same time.

⇒ The state of this option is saved together with the Control Room presets and not with the Preference Presets.

Support for the Yamaha XF data format

Cubase now supports the Yamaha XF format. XF is an extension of the standard MIDI file format that allows saving of 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).

⚠ 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 track(s) containing the XF data.

Track Quick Controls improvements

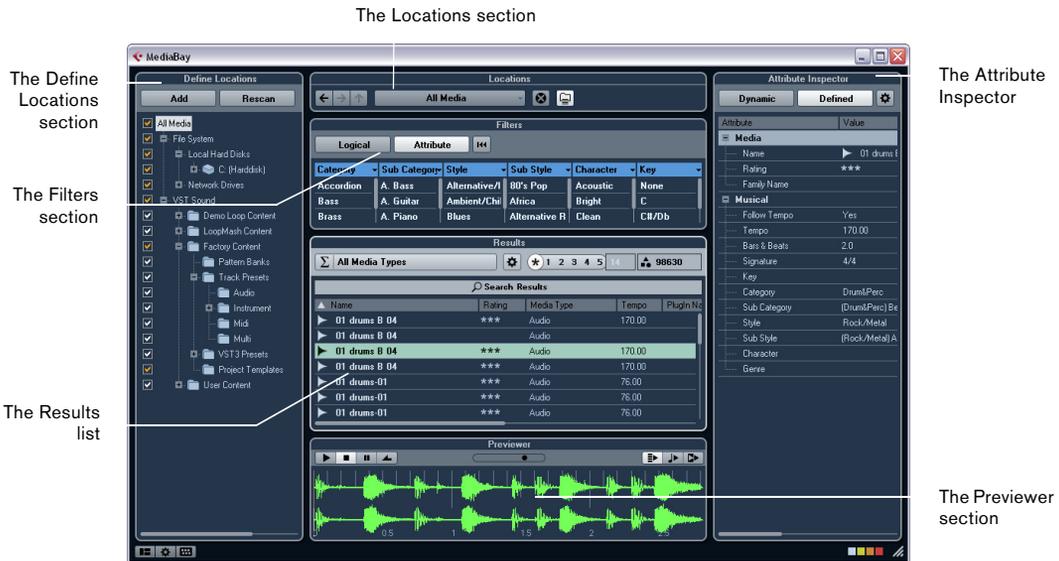
Track Quick Controls are now available for audio, instrument, MIDI, group, FX, input, and output channels.

3

The MediaBay

Introduction

One of the biggest challenges in typical computer-based music production environments is how to manage the ever-growing number of plug-ins, instruments, presets, etc. from multiple sources. Cubase features an efficient database for media file management that allows you to handle all your media files from within your sequencer program.



The MediaBay is divided into several sections:

- Define Locations – Here, you can create “presets” for locations on your system that you want to scan for media files, see [“Defining Locations”](#) on [page 22](#).
- Locations – Here, you can switch between the previously defined Locations.
- Filters – Here, you can filter the Results list using a logical or an attribute filter, see [“The Filters section”](#) on [page 28](#).
- Results – Here, all found media files are displayed. You can also filter the list and perform text searches, see [“The Results list”](#) on [page 23](#).
- Previewer – This section allows you to preview the files shown in the Results list, see [“Previewing files”](#) on [page 26](#).
- Attribute Inspector – In this section, you can view, edit and add media file attributes (or tags), see [“The Attribute Inspector”](#) on [page 30](#).

Important notice for users updating to Cubase 5.5

- ⚠ When updating Cubase from versions 4.x, 5.0.x, or 5.1 to 5.5, please note that any previously existing MediaBay database files are not supported. To create a database, Cubase 5.5 has to rescan your system for media files.

Accessing the MediaBay

To open the MediaBay, select the MediaBay command on the Media menu. You can also use the corresponding key command (by default F5).

Setting up the MediaBay window

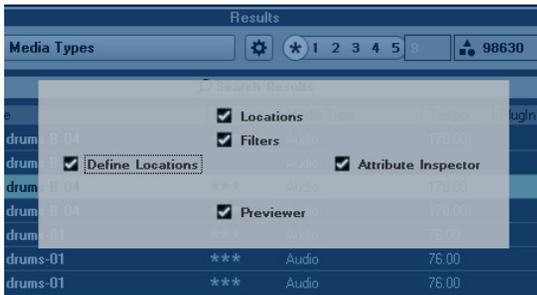
You can show and hide the different sections of the MediaBay (except for the Results list). This is handy, as it allows you to save screen space and enables you to display only the information you need for your work.

Proceed as follows:

1. Click the “Set up Window Layout” button in the lower left corner of the MediaBay window.



A transparent pane appears, covering the window. In the center of it is a gray area containing checkboxes for the different sections.



2. Deactivate the checkboxes for the sections you want to hide from view.

Any changes you make here are directly reflected in the MediaBay window. Note that the Results list cannot be hidden.

⇒ 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 desired checkbox.

3. When you are done, click outside the gray area to exit the Setup mode.

Alternatively, you can wait a few seconds for the pane to disappear automatically.

- You can change the size of the individual MediaBay sections by dragging the divider line between two sections.

Working with the MediaBay

When working with many music files, the most important thing is to find the content you need quickly and easily. The MediaBay helps you find and organize your content in an effective and efficient way. After the first scan of the folders you have activated for scanning (which will take a certain time), all the files that were found are there for you to browse, search, or modify.

At the beginning, all media files of the supported formats are listed in the Results section: far too many to get a good overview. However, by using the search and filter techniques, you get the desired results very quickly.

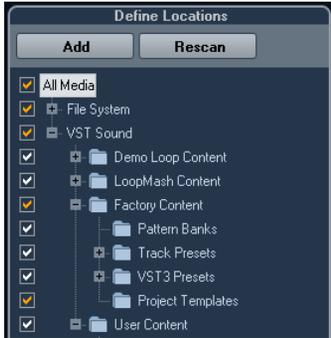
The first thing to do is to set up “Locations”, that is folders or directories on your system that contain media files. Usually, files are organized in a specific way on your computer. For example, you might have folders reserved for audio content, folders for special effects, folders for combinations of sounds making up the ambience noise 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 (for example, by adding new hard disks or an external volume containing media files you want to work with), you should make it a habit to save the new volumes as Locations or add them to your existing Locations. Afterwards, you can hide the Define Locations section from view. That way, the MediaBay occupies less screen space and you can concentrate on the important thing: the Results list.

For this list, you can specify which file types are displayed, see [“Filtering according to media type”](#) on [page 23](#). If there are still too many files to choose from, you can narrow down the results using a text search function, see [“Performing a text search”](#) on [page 24](#). This is often all it needs to display what you want, allowing you to proceed by previewing the files before inserting them into your project (see [“Previewing files”](#) on [page 26](#)). However, if you need very complex and detailed filtering, this is also possible using either attribute or logical filtering, see [“The Filters section”](#) on [page 28](#). For filtering or searches, the use of attributes is recommended: By specifying specific attribute values for your files (categorizing them as production sound, foley, special effects, etc.), you can considerably speed up the browsing process, see [“The Attribute Inspector”](#) on [page 30](#).

Finally, the files can be easily inserted into the project, by using drag & drop, by double-clicking or using the context menu options, see [“Inserting the files into the project”](#) on [page 25](#).

The Define Locations section



When you open the MediaBay for the first time, a scan for media files is performed on your system. You specify which folders or directories you want to be included in the scan by activating/deactivating the checkboxes for the folders in the Define Locations section. Depending on the amount of media files on your computer, the scan may take a while. All files that are found in the specified folders are shown in the Results list.

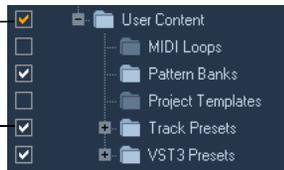
- To include a folder in the scan, activate its checkbox.
- To exclude a folder from the scan, deactivate its checkbox.
- To restrict the search to individual subfolders, activate/deactivate their checkboxes.

The color of the checkmark helps you to identify which folders and subfolders are scanned:

- A white checkmark indicates that all subfolders are scanned.
- An orange checkmark indicates that at least one subfolder is excluded from the scan.

Some subfolders of this folder are excluded from the scan.

All subfolders of this folder are included in the scan.



- To revert to scanning a complete folder (including all subfolders), click on an orange checkmark. The checkmark becomes white, to indicate that all folders are scanned.

The scanning status for the individual folders themselves is indicated by the color of the folder icons:

- A red icon means that the folder is currently being scanned.
- A light blue icon means the folder has been scanned.
- A dark blue icon is displayed for folders which are excluded from the scan.
- An orange icon is displayed when the scanning process for the folder was interrupted.
- A yellow icon is displayed for folders that have not yet been scanned.

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. Select Keep if you want to keep the database entries, but want to exclude the folder from being scanned (when you trigger a re-scan for example). Select Remove if you do not want to use the contents of this folder in your projects.

- When you activate the “Please, don’t ask again” option, no further warning messages will be shown when you deactivate other checkboxes, for as long as the program is running.

When you quit and re-launch Cubase, these warning messages will be displayed again.

The VST Sound node

The Define Locations section provides a shortcut to user content and factory content files, including the preset folders: the VST Sound node.

- The folders below the VST Sound node represent the directories in which content files and track presets, VST presets, etc. are stored by default.

To find out the “true” location of a file, right-click on it in the Results list and select “Open in Explorer” (Win)/“Reveal in Finder” (Mac). This will open an Explorer/Finder window in which the corresponding file is highlighted. Please note that this function is not available for files which are part of a VST Sound archive.

Updating the display

You can update the display in two ways: by rescanning or by refreshing.

Rescanning

When you click the Rescan button, the selected folder is rescanned. If a folder contains a large number of media files, the scanning process may take some time. Use this function if you have made changes to the content of specific media folders and want to scan these folders again.



⇒ You can also rescan the selected folder by right-clicking on it and selecting Rescan Disk from the context menu.

Refreshing

In addition to the Rescan Disk option, the context menu for the selected node or folder in the Define Locations section also contains a Refresh Views option. This refreshes the display for this location without rescanning the corresponding media files.

This is useful in the following situations:

- When you have modified attribute values (see [“Editing attributes \(tagging\)”](#) on [page 31](#)) and want to update the results list so that these values are displayed for the corresponding files.
- When you have mapped a new network drive, for example, and want this to appear as a node in the Define Locations section. Simply select the Refresh Views option for the parent node and the new drive will appear in the Define Locations section (ready to be scanned for media files).

Defining Locations

When you have set up the Define Locations section according to your preferences, and the content is scanned, it is time to make it available in a meaningful way. For this, you can define locations, i.e. shortcuts to the folders you want to work with, that will be available from the Locations section for convenient access.

To define a location, proceed as follows:

1. In the list to the left, select the desired folder.
2. Click the Add button.

A naming dialog for the new location is displayed.

3. Accept the default name or enter a new name.
4. Click OK.

The new location is added to the Locations pop-up menu in the Locations section (see below).

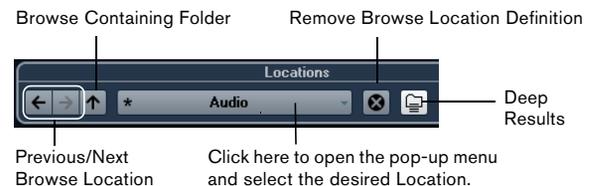
5. Repeat these steps to add as many locations as you need.

Once you have set up your locations, you can hide the Define Locations section from view (see [“Setting up the MediaBay window”](#) on [page 20](#)), to save screen space.

⇒ Some Location presets are available by default. These are: “All Media” (the topmost node in the Define Locations section), “Local Harddisks” (the local harddisks in your computer system) and “VST Sound” (the folder in which Steinberg sound files, loops and presets are stored by default).

The Locations section

When you open the Locations pop-up menu and select a location, the media files 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.



- To change the browse location, simply select another location from the pop-up menu.

If the available Locations don't yield the desired results or if the folder 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 in a sequence of selected folders, use the “Previous/Next Browse Location” buttons.

These paths will be 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 (without showing these subfolders), activate the Deep Results button.
When this button is deactivated, only the folders and files contained in the selected folder are shown.

The Results list

The Results list is at the heart of the MediaBay. Here, you will find all the files found in the selected location.



As the number of files displayed can be huge (the info field in the top right corner of the Results section shows the number of files found with the current filter settings), you might want to use any of the filter and search options in the MediaBay to narrow down the list. The available options are described below.

⇒ The maximum number of files that are displayed in the Results list can be set by specifying a new value for “Maximum Items in Results list” in the Preferences (see “[Preferences](#)” on [page 34](#)).

Filtering according to media type

The Results list can be set to display only a particular media type or a combination of media types.

- Click in the field where the currently displayed media types are shown (by default “All Media Types”) to open the Show Media Types dialog.

Here, you can activate the media types you want to be displayed in the Results list.



Select this option to display all types.

Here, the last four media type selections you made are listed.

The media types you activate here are shown 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 the media type field. When you have selected several media types, the Mixed Media Type icon is used.

The media types

In the “Show Media Types” dialog, you can activate the media types you want to be displayed in the Results list. The following types are available:

Option	Description
Audio Files	When this is activated, the list shows all audio files. The supported formats are .wav, .w64, .aiff, .aifc, .rex, .rx2, .mp3, .mp2, .ogg, .sd2, .wma (Windows only).
MIDI Files	When this is activated, the list shows all MIDI files (file name extension .mid).
MIDI Loops	When this is activated, the list shows all MIDI loops (file name extension .midloop).
Pattern Banks	When this is activated, the list shows all pattern banks (file name extension .patternbank). Pattern banks are generated by the MIDI plug-in Beat Designer. For more information, see “ Previewing pattern banks ” on page 27 and the separate PDF document “ Plug-in Reference ”.
Track Presets	When this 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 mixer settings that can be applied to new tracks of various types. For more information, see the chapter “ Working with track presets ” in the Operation Manual.

Option	Description
Plug-in Presets	When this is activated, the list shows all VST presets for instrument and effect plug-ins. 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. For more information, see the chapter “Working with track presets” in the Operation Manual.
Video Files	When this is activated, the list shows all video files.
Projects	When this is activated, the list shows all project files (from Cubase, Nuendo, Sequel): .cpr, .npr, .steinberg-project.

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. In most cases, you will probably only want to display a few main attributes in the Results list and use the Attribute Inspector to view the complete list of attribute values for the files.

Proceed as follows:

1. Select the media type (or combination of 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.

Click here to open the pop-up menu.

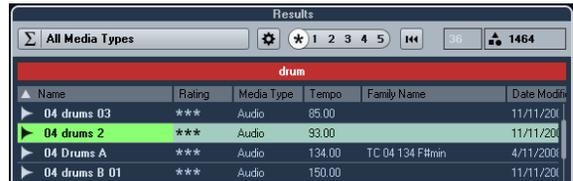


Activate the attributes that you want to be displayed in the Results list.

- ⇒ If you want to see none of the attributes of a certain category, choose the “Select None” option on the corresponding submenu.
- ⇒ When the “Allow Editing in Results List” option is activated in the Preferences dialog, you can also edit attributes in the Results list. Otherwise this is only possible in the Attribute Inspector.

Performing a text search

You can limit the number of results in the Results list using the text search function. When you enter text in the Text Search field, only media files whose attributes match the entered text will be displayed.



For example, if you are looking for all audio loops relating to drum sounds, simply enter “drum” in the search field. The search results will contain loops with names such as “Drums 01”, “Drumloop”, “Snare Drum”, etc. Also, all media files with the Category attribute Drum&Percussion, or any other attribute that contains “drum” will be found.

When you enter text in the field, its background becomes red, to indicate that a text filter is active for the list. To reset the text filter, delete the text.

Boolean text search

You can also perform advanced searches, using boolean operators or wildcards. The following elements can be used:

Option	Description
And [+]	[a and b] – When entering strings separated by “and” (or a plus sign), all files are found that contain both a and b. [And] is the default setting when no boolean operator is used, i.e. you can also enter [a b].
Or [,]	[a or b] – When entering strings separated by “or” (or a comma), files are found that contain either a or b, or both.
Not [-]	[not b] – When entering text preceded by “not” (or a minus sign), all files not containing b will be found.
Parentheses [()]	[(a or b) + c] – Using parentheses, you can group text strings. In this example, files are found that contain c and either a or b.
Quotation marks [“ ”]	[“example text”] – With quotation marks, you can define sequences of several words. Files are found if they contain this sequence of words.

- ⚠ When you are searching for files whose name contains a hyphen, put the search text in quotation marks, because otherwise the program will treat the hyphen as the boolean operator “not”.

⇒ The operators can also be used for Logical filtering with the “matches” condition selected, see [“Applying a logical filter”](#) on page 28.

The rating slider



With this setting, only files with a rating of at least 2 are displayed.

Using the rating slider above the Results list, you can specify rating settings for your files, ranging from 1 to 5. This makes it possible to exclude certain files from the search according to their quality.

When you move the rating slider, the active rating filter is indicated in red. All files of this rating are displayed in the list.

The search in progress indicator

At the top right in the Results list you will find an indicator which shows whether the MediaBay is currently searching for files.



— When this indicator is shown, a media search is in progress.

Resetting the list

When you have set up filters for the Results list, you can set everything back to default by clicking the Reset Results Filter button to the right of the Rating slider.



This will delete any text in the text search field, set the rating slider to display all files and deactivate all the media type filters.

Inserting the files into the project

You can insert files into the project by right-clicking on them and selecting one of the “Insert into project” options from the context menu, or you can double-click them.

What happens next depends on the track type:

Audio files, MIDI loops, and MIDI files can be inserted into the project by double-clicking them in the Results list. They will be inserted on the active track, if this matches the file type or onto a new track if no corresponding track is active. The files will be inserted at the current project cursor position.

Similarly, if you double-click on a track preset, it will be applied to the active track, if the track type matches the track preset. Otherwise, a new track will be 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 will load the entire instrument settings, programs, etc. For others, only one program will be loaded, see [“Applying instrument presets”](#) on page 36.

When you double-click on a pattern bank, a new MIDI track is created in the Project window, with an instance of the Beat Designer plug-in as insert effect which is using this pattern.

Managing files in the Results list

- You can move/copy a file from the Results list to another location by clicking on it and dragging it to another folder in the Define Locations section.

You will be asked whether you want to copy or move the file to the new location.

- You can change the display order in the Results list by clicking on a column heading, and dragging that heading to another position in the display.

- To delete a file, right-click it in the list and select Delete from the context menu.

A warning message is displayed, asking you to confirm that you really want to move this file to the operating system’s trash folder. The data you delete here will be permanently deleted from your computer, therefore be sure to delete only the files you do not want to use any more.

⚠ When a file was deleted in the Explorer/Finder, it will still be displayed in the Results list, although it is no longer available to the program. To remedy this, you have to re-scan the corresponding folder.

Previewing files

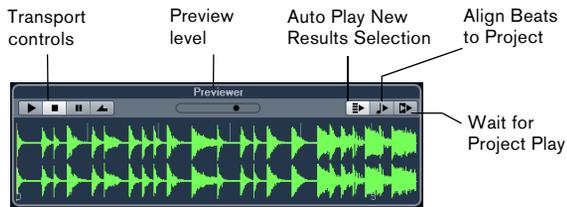
When you have sufficiently narrowed down the list of files, you will want to preview individual files to find out which one to use in your project. This is done in the Previewer section.

Note that some MediaBay-specific Preferences affect the playback of media files, see [“Preferences”](#) on [page 34](#).

The elements visible in this section and their functions depend on the type of media file.

⚠ The Previewer section is not available for video files, project files, and audio track presets.

Previewing audio files



To preview an audio file, click the Play button. What happens next depends on the following settings:

- When “Auto Play New Results Selection” is activated, any file you select in the Results list is automatically played back.
- When “Align Beats to Project” is activated, the file you selected for preview in the Results list is played back in sync with the project, starting at the project cursor position. Note that this may apply realtime time stretching to your audio file.

When 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.

- When “Wait for Project Play” is activated, the Play and Stop functions from the Transport panel are synchronized with the Play and Stop buttons in the Previewer section. This option is very useful for previewing audio loops. To use it 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. Play and Stop of the Previewer transport can still be used if needed.

Previewing MIDI files



To preview a MIDI file (.mid), you first have to select an output device from the Output pop-up menu.

- “Auto Play New Results Selection” and “Align Beats to Project” work as for audio files, see above.

When working with long MIDI files, you can click in the timeline to jump to a specific position in the file.

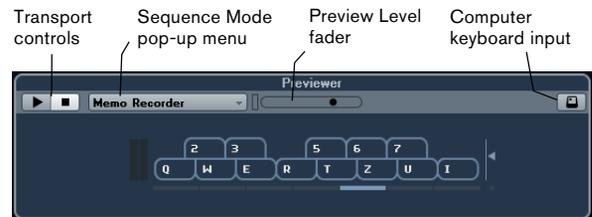
Previewing MIDI loops

To preview a MIDI loop file, click the Play button.

- “Auto Play New Results Selection” works as for audio files, see above.
- MIDI loops are always played back in sync to the project.

Previewing VST presets and track presets for MIDI and instrument tracks

⇒ Track presets for audio tracks can only be previewed in the Presets browser (see the chapter “Working with Track Presets” in the Operation Manual).



Track presets for MIDI or instrument tracks and VST presets require MIDI notes for previewing. These notes can be sent to the track preset in the following way:

- Via MIDI Input
- Using a MIDI file
- Using the Memo Recorder
- Via the computer keyboard

These methods will be described in the following sections.

Previewing presets via MIDI Input

MIDI input is always active, i.e. 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

Proceed as follows:

1. On the Sequence Mode pop-up menu, select “Load MIDI File”.

2. In the file dialog that opens, navigate to the desired 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.

The notes received from the MIDI file are now played back with the settings of the track preset applied.

⇒ 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

The Memo Recorder function continually repeats a given sequence of notes as a loop.

To use the Memo Recorder, proceed as follows:

1. On the Sequence Mode pop-up menu, select Memo Recorder.

2. Enter the notes via the MIDI or computer keyboard. The Play button is automatically activated and you will instantly hear the notes you play with the preset settings applied.

▪ When you stop playing notes and wait for 2 seconds, the note sequence you played until this moment will be played back in a continuous loop.

To use another sequence, simply start entering notes again.

⇒ You cannot use the Memo Recorder when previewing presets using a MIDI file.

Previewing presets via the computer keyboard

Proceed as follows:

1. Activate the “Computer Keyboard Input” button.

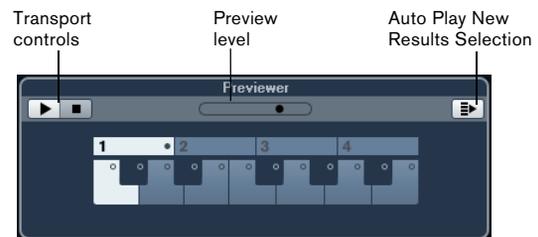
The keyboard display in the Previewer section works in the same way as the Virtual Keyboard, see the chapter “Playback and the Transport panel” in the Operation Manual.

⚠ When you activate the “Computer Keyboard Input” button, the computer keyboard is used exclusively for the Previewer sections, i.e. the usual key commands are blocked. 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), and [F2] (Show/Hide Transport panel).

2. Enter the notes via the corresponding keys on the computer keyboard.

Previewing pattern banks

Pattern banks containing drum patterns can be created with the MIDI plug-in Beat Designer. Detailed information on the Beat Designer and its functions can be found in the chapter “MIDI effects” in the separate PDF document “Plug-in Reference”. One pattern bank contains 4 sub-banks which in turn contain 12 patterns each. In the Previewer section for a pattern bank file, a keyboard-style display allows you to select a subbank (click on a number at the top) and a pattern (click on a key).



▪ To preview a pattern, select the pattern bank in the Results list. In the Previewer section, choose a subbank and pattern. Then click the Play button.

Note that subbanks can contain empty patterns. Selecting an empty pattern in the Previewer section will have no effect. Patterns containing data are indicated by a circle in the upper part of the key in the display.

- “Auto Play New Results Selection” works as for audio files, see above.

The Filters section

With the MediaBay, you can perform very refined file searches. You have two possibilities: Logical or Attribute Filtering.

Applying a logical filter

Logical filtering is similar to working with the Logical Editor, see the chapter “The Logical Editor, Transformer and Input Transformer” in the Operation Manual.



If you click the Logical button in the Filters section, you can set up complex conditions that must be met for files to be found. Here, you can search for a specific file attribute value, for example.

Proceed as follows:

1. In the Locations section, select the Location in which you want to search for files.
2. Activate the Logical search mode by clicking on the Logical button in the Filters section.
A condition line appears.
3. Click in the leftmost field, to open the Select Filter Attributes dialog.
The dialog shows an alphabetical list of file attributes you can choose from. At the top of the list, the MediaBay maintains an automatically generated list of the last 5 attributes selected during previous searches.
4. Select the attribute(s) you want to use, and click OK.
 - Note that you can select more than one attribute. This creates an OR condition: the files found will match either one or the other attribute.
5. Click OK to set the attribute(s) to search for.
6. On the Condition pop-up menu next to the Attribute pop-up menu, select the desired option.

The following options are available:

Option	Description
contains	The search result must contain the text or number specified in the text field to the right.
omits	The search result must not contain the text or number specified in the text field to the right.
equals	The search result must correspond exactly to the text or number specified in the text field to the right, including any file extension. Text searches are not case-sensitive.
>=	The search result must be higher than or equal to the number specified in the field to the right.
<=	The search result must be lower than or equal to the number specified in the field to the right.
is empty	Use this option to find files for which certain attributes have not been specified yet.
matches	The search result must include the text or number entered in the text field to the right. You can also use boolean operators. This allows for a very advanced text search, see “Performing a text search” on page 24.
range	When “range” is selected, you can specify a lower and an upper limit for the search result in the fields to the right.

7. Enter the text or number you are looking for in the field to the right.

The Results list is automatically updated, showing only the files that correspond to your search conditions.

⇒ For all conditions except “range”, you can enter more than one string in the text field (separate the different search strings with a space). These strings form an AND condition, i.e. the files that are found will match all the strings entered in the field.

- To add another filter line, click the “+” button to the right of the text field.

This way, you can add up to five filter lines in which you can define further search conditions. Note that two or more filter lines form an AND condition, i.e. the files searched for must match the conditions defined in all filter lines. Click the “-” button for a filter line to remove it.

- To reset all search fields to their default settings, click the Reset Filter button in the top right corner of the Filters section.



Advanced text search

You can also perform very advanced text searches using boolean operators. Proceed as follows:

1. Select the desired location.
2. Activate Logical filtering by clicking on the Logical button at the top of the Filters section.
3. Select the desired attribute on the Attributes pop-up menu, or leave the setting on “Any Attribute”.
4. Make sure that the condition is set to “matches”.
5. Specify the desired text in the field to the right using boolean operators.

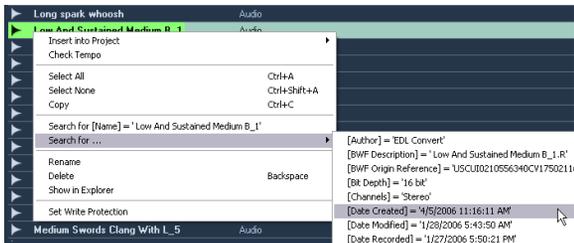
The available options are described in the section [“Performing a text search”](#) on page 24.

Performing a context menu search

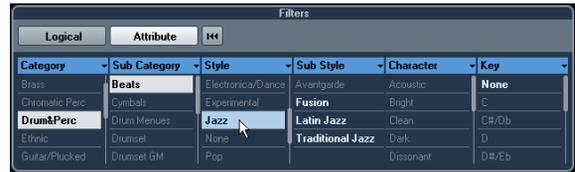
If you have selected a file in the Results list or the Attribute Inspector, which contains an attribute you are interested in, there is a very fast way to look for other files with the same attribute.

Right-click the selected file to open the context menu and select the attribute value from the “Search for...” sub-menu. This way you can easily find all the files that have this value in common, for example if you want to view all files that were created on the same day.

⇒ This is the same as specifying a logical search string, see above. When you select any of the “Search for...” options, the Filters section automatically switches to Logical filtering and the corresponding filter condition line is displayed. To return to the previous settings, click the Go Back button in the Filters section.



Applying an attribute filter



The MediaBay allows you not only to view and edit some of the standard file attributes found in all computer files, but it also provides preconfigured attributes, or “tags”, that you can use to organize your media files, see [“The Attribute Inspector”](#) on page 30.

If you click the Attribute button, the Filters section displays all values found for a specific attribute. Selecting one of these values will result in a list of files all showing this particular attribute value. For example, you could look for sample rates and pick 44.1 kHz to give you a list of all files with that particular sample rate.

The advantages of the use of attributes become obvious when having to find a specific file in a large database, without knowing the name of that file.

⚠ In Cubase Studio, the Attribute search is the only search mode available.

When you activate Attribute filtering, the Filters sections shows attribute columns, each with its own list of attribute values. If the columns are wide enough, the number of files that match this criteria is displayed to the right of the filter name.

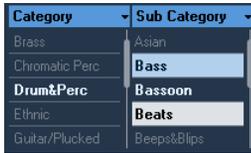
You define an Attribute filter by clicking on the values in an attribute column: only the files that match the selected attribute values are then shown in the Results list. Select more attribute values from other columns to further refine your filter.

⚠ Some attributes are directly linked to each other (e.g. for each Category value, there are certain Sub Category values available). Changing the value in one of these attribute column will give you different values in the other column!

⚠ Each attribute column displays only the attribute values found in the currently selected location! This means that selecting another location may lead to the display of different attributes.

- Selected attribute values in the same column form an OR condition.

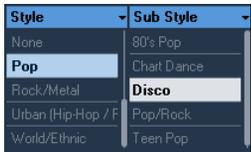
This means that files must be tagged according to either one or the other attribute value to be displayed in the Results list.



⇒ Note that this is not true for the Character attribute, which always forms an AND condition, see below.

- Attribute values in different columns form an AND condition.

This means that files must be tagged according to all these attribute values to be shown in the Results list.



Assigning attribute values to your files makes it easy to organize the media files. This is described in detail in the section “[The Attribute Inspector](#)” on [page 30](#).

⇒ You can also create user attributes (see “[Defining user attributes](#)” on [page 33](#)) to create your own categories.

Further options for Attribute searches

- You can change which attribute type is displayed in each column by clicking on the column title and selecting another attribute from the context menu.

- You can select an attribute value, by clicking on it. To deselect it, click the value again.

Note that you can select more than one value in each attribute column.

- You can clear all settings in the attribute columns by clicking the Reset Filter button at the top right of the Filters section.

Clicking this button also resets the Results list.

The Attribute Inspector

Attributes (or “tags”) for media files are sets of metadata providing additional information on the file.

When you have selected one or more files in the Results list, the Attribute Inspector shows a two-column list of attributes and their values. This is very handy to get a quick overview of a selected file (for example when you are stepping through the files in the Results list).

The different types of media files have different attributes: For example, for .wav audio files you will find attributes like name, length, size, sample rate, etc., while for .mp3 files, additional attributes such as artist or genre are available.

In this section, you can also edit the attribute values of files or enter new attribute values, see below.

Attribute	Value
Media	
Name	2 Outsirts Of Town 1 R
Media Type	Audio
Path	C:\my projects\Wuendo 5\Audio
File Type	AIFF File
Date Created	2/15/2010 5:20:44 PM
Date Modified	2/15/2010 5:20:47 PM
Size	35,67 MB

The available attributes are divided into several groups (Media, Audio, Staff, etc.), so as to keep the list manageable and make it easy to find the desired element quickly.

You have access to the standard attributes and the pre-configured attributes provided by Cubase. Additionally you can define your own attributes and add these to your files.

Attributes can be shown in the Attribute Inspector in two different ways:

- Click the Dynamic button to show all available attribute values.

This list is automatically generated by Cubase. Use this view if you want to see the attributes the selected files have already been tagged with.

- Click the Defined button to show a configured set of attributes for the selected media type.

In this mode, you can choose which attributes are displayed (regardless of whether corresponding values are available for the selected files). For more information on how to set up the list of displayed attributes, see “[Managing the attribute lists](#)” on [page 33](#).

Editing attributes (tagging)

The search functions, especially the Attribute filter, become a truly powerful media management tool when making extensive use of tagging, i.e. when adding and editing attributes.

Media files are usually organized in complex folder structures to provide a logical way of guiding the user to the desired files, with the folder and/or file names indicating the instrument, style, tempo, etc.

To find a particular sound or loop in such a folder structure can be very time consuming – tagging is the answer!

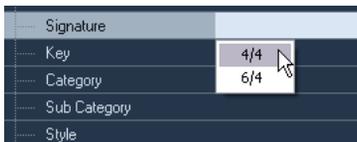
Editing attributes in the Attribute Inspector

In the Attribute Inspector, you can edit attribute values of the various media files. Attribute values can be chosen from pop-up lists, entered as text or numbers, or set to Yes or No.

⇒ Note that changing an attribute value in the Attribute Inspector will permanently change the corresponding file (unless the file is write-protected or part of a VST Sound archive).

You can edit attributes in the following way:

1. Select the file that you want to make settings for in the Results list.
The corresponding attribute values are displayed in the Attribute Inspector.
2. Click in the Value column for the attribute.



Depending on the selected attribute, the following happens:

- For most of the attributes, a pop-up menu opens from which you can choose a value. This can be a name, a number and an on/off state. For example, this is the case for the attributes Name, Family Name, or Author. Some of the pop-up menus also have a "more..." entry to open a window with more attribute values. These attribute selection windows also feature a Text Search button that you can use to find specific values more quickly.

- For the Rating attribute, you can click in the Value column and drag left or right to modify the setting.
- For the Character attribute (Musical group), the Edit Character dialog opens. Click a radio button on the left or the right side and then click OK to define values for the Character attribute.

3. Set the attribute to the desired value.

- Many attribute values can also be edited by double-clicking in the Value column of the Attribute Inspector. Simply enter/change the text or number setting in the field displayed for a value.
- To remove the attribute value from the selected files, right-click in the corresponding Value column and select "Remove Attribute" from the context menu.
- "Display only" attributes cannot be edited. If this is the case, the file format probably does not permit changing this value, or changing a particular value makes no sense (e.g. you cannot change the file size in the MediaBay).

⇒ You can also select several files and make settings for them simultaneously (except for the name, which must be unique for every file).

About the color scheme used in the Attribute Inspector

The colors used for the displayed values in the Attributes Inspector have the following meaning:

Color	Description
White	This represents a "normal" attribute: One or more files are selected in the Results list, and they have the same values.
Yellow	Yellow color stands for an "ambiguous" attribute: Multiple files are selected in the Results list, and their values differ.
Orange	This stands for an "ambiguous static attribute": Multiple files are selected in the Results list, with differing values, and which cannot be edited.
Red	Red values are displayed for a "static attribute": One or more files are selected in the Results list, whose values cannot be edited.



Information on the meaning of the colors used in the Attribute Inspector are also displayed in a tooltip when you move the mouse pointer over one of the color icons below the Attribute Inspector.

Editing attributes in the Results list

You can also edit attributes directly in the Results list. This allows you, for example, to assign tags to a library of loop files.

⚠ This is only possible if “Allow Editing in Results List” is activated, see “Preferences” on [page 34](#).

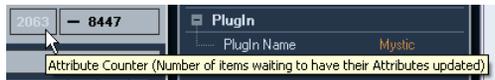
Proceed as follows:

1. In the Results list, select the file(s) for which you want to change an attribute value.
2. Click in the column for the value you want to change and make the desired settings.

As in the Attribute Inspector, you can choose a value from a pop-up menu, enter the new value directly, etc.

Editing the attributes of multiple files simultaneously

There is no limit as to how many files can be tagged at the same time, but you need to be aware that the tagging of a large amount of files in one go may take quite a while. This operation is executed in the background, so that you can continue with your work as usual. By looking at the Attribute Counter above the Results list, you can see how many files still have to be updated.

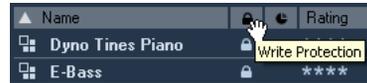


- If you close Cubase before the Attribute Counter has gone down to zero, a dialog with a progress bar is displayed, indicating how long the updating process will take. You can choose to abort this process. In this case only the files that were updated before you clicked “Abort” will have the new attribute values.

Editing the attributes of write-protected files

Media files may be write-protected due to a number of reasons: They may belong to content that was provided by someone else who write-protected the files, you may have write-protected them yourself in order not to overwrite them accidentally, or the file format could restrict write operations by the MediaBay.

In the MediaBay, the write protection status of files is shown as an attribute in the Attribute Inspector and in the Write Protection column in the Results list.



However, there may be cases when you want to define attributes for write-protected files. For example, you might want to apply attributes to the content files that came with Cubase or you are working on the same files with several people and cannot modify these files. In these scenarios, you still want to be able to find files quickly and improve your workflow.

Therefore, it is possible to change the attribute values of write-protected files in the MediaBay. These changes are not written to disk though and occur in the MediaBay only.

- When you specify attribute values for a file that is write-protected, this is reflected in the Pending Tags column next to the Write Protection column in the Results list. Note that if you rescan the MediaBay content and a media file on your hard disk has changed since the last scan, all pending tags for this file will be lost.
- If a file has pending tags, and you want to write the corresponding attributes to the file, you need to remove the write protection first, and then select the “Write Tags to File” command from the context menu.
 - ⇒ If the Write Protection and/or the Pending Tags column are not visible, you may have to enable the corresponding attributes for the file type in question in the Attribute Inspector.
- You can change the write-protection status of your media files, provided that the file type allows write operations and you have the necessary operation system permissions: To set or remove the write protection attribute for a file, simply select the file in the Results list and select “Set/Remove Write Protection” from the context menu.
 - ⇒ If you use other programs than Cubase to change the write-protection status of a file, this will not be reflected in the MediaBay until you rescan the files!

Managing the attribute lists

In the Attribute Inspector, you can define which attributes are shown in the Results list and in the Attribute Inspector itself. For different media types, individual “attribute sets” can be configured.

Proceed as follows:

1. In the Attribute Inspector, click the Defined button.
2. Click the “Configure Defined Attributes” button to the right of the Defined button.

A number of controls are displayed.

3. Click the leftmost button below the Defined/Dynamic buttons to open the “Select Media Types” dialog, activate one or more of the media types, and click OK.

The Attribute Inspector now shows a list of all attributes available for these media types.

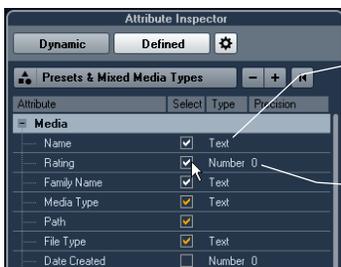
- If you have activated more than one media type, your settings affect all selected types.

An orange checkmark indicates that the current display settings for an attribute differ for the selected media types.

- The display settings made for the Mixed Media Type option are applied whenever you select files of different media types (for example audio and MIDI files) in the Results list or the Attribute Inspector.

4. To select a certain attribute, activate the corresponding checkbox.

- You can also select several attributes and activate/deactivate their checkboxes in one go.



The Type column shows whether the value for an attribute is a number, text, or a Yes/No switch.

The Precision column shows the number of decimals displayed for number attributes.

- You can reset the display settings you made by clicking the “Reset to Default” button in the top right corner. This will reset the display settings for all media types to their default settings.

⇒ To make settings for another media type, make sure to only select this type in the list in the dialog.

5. When you have set up the attributes for all the media types you are working with, exit the Configuration mode by clicking the “Configure Defined Attributes” button again.

Defining user attributes

If you find that the available attributes are not suitable for your work, you can define your own attributes and save these in the MediaBay database and the corresponding media files.

Proceed as follows:

1. In the Attribute Inspector, activate the Defined button and click the “Configure Defined Attributes” button to enter configuration mode.

A number of controls are displayed.

2. Click the “Add User Attribute” button (the “+” sign). A dialog opens.

3. Specify the type of the attribute.

Attributes can be of the types “Text”, “Number” or “Yes/No” switch. For “Number” attributes, you can specify how many decimals are displayed, by entering the corresponding value in the Precision field.

4. In the text field below, enter the name for the new attribute.

Note that this is the name as it will be displayed in the program. Below the text field, you will see the name as it will be used internally (e.g. in the MediaBay database). This way, you will see immediately if a certain name is invalid and cannot be used.

5. Click OK.

The new attribute is added to the list of available attributes and will be displayed in the Attribute Inspector and the Results list.

- To remove a user attribute, select it in the attribute list and click the “Remove User Attribute” button (the “-” sign). The attribute is removed from any attribute list.

- Cubase recognizes all user attributes that are included in media files. For example, if you load content from another user, who has assigned his own user tags to the files, these tags are also shown in the MediaBay.

The Loop Browser and Sound Browser windows

The Loop Browser and Sound Browser items on the Media menu open two different “views” of the MediaBay. The Loop Browser is preconfigured for quickly browsing your “loops”, i.e. audio files, MIDI loops, and pattern banks. The default browse location is the VST Sound node. Similarly, the Sound Browser is set up for you to be able to quickly search the desired sound, without having to configure the window. By default, it is set to display track presets and plug-in presets. The default browse location is the VST Sound node.

The Loop Browser and Sound Browser offer the same functions as the MediaBay, i.e. you can specify different browse locations, define searches, set up the available panes as desired, etc., as described previously in this chapter.

Preferences

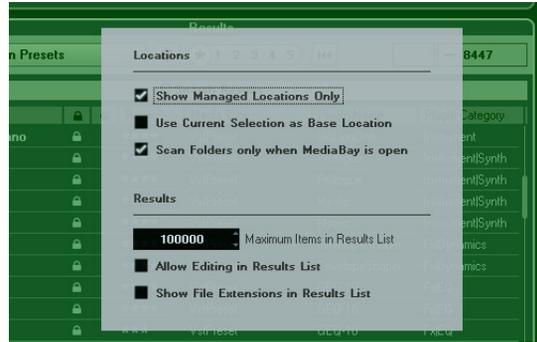
In the Preferences dialog in Cubase, you can find options and settings that control the global behavior of the program. The Preferences dialog contains a special MediaBay page. These settings are also available from within the MediaBay.

To open the Preferences pane for the MediaBay, proceed as follows:

1. Click the MediaBay Preferences button in the lower left corner of the window.



- A transparent pane appears, covering the window. In the center of it is a gray area where the available preferences for the Locations section and the Results list are displayed.



2. Configure the MediaBay to your liking by activating/deactivating the options.

The following options are available in the Locations section:

Option	Description
Show Managed Locations Only	Activate this to hide all folders that are not scanned for files. This will keep the tree view in the Define Locations section less cluttered.
Use Current Selection as Base Location	Activate this to show only the selected folder and its subfolders. To switch back to the display of all folders, deactivate this option.
Scan Folders Only when MediaBay is Open	When this is activated, Cubase only scans for media files when the MediaBay window is open. When this is deactivated, the folders are scanned in the background even when the MediaBay window is closed. However, Cubase will never scan folders while playing back or recording.

The following options are available in the Results section:

Option	Description
Maximum Items in Results List	Use this parameter to specify the maximum number of files that are displayed in the Results list. This avoids unmanageably long lists of files. Note that the MediaBay does not warn you if the maximum number of files has been reached and there might be situations where a certain file you were looking for could not be found, because the maximum number of files was reached.
Allow Editing in Results List	When this is activated, you can also edit attributes in the Results list. When this option is deactivated, editing can only be done in the Attribute Inspector.
Show File Extensions in Results List	When this is activated, file name extensions (e.g. .wav or .cpr) are displayed in the Results list.

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, proceed as follows:

1. Click the Key Commands button in the lower left corner of the window.



A transparent pane appears, covering the window. In the center of it is a gray area where the available key commands are displayed.



- If you only want to get an overview over the key commands, you can exit the pane by clicking on its background (not in the gray area).
- If you want to assign or modify key commands, click in the gray area.

The Key Commands dialog opens, in which you can set up and edit key commands, see the chapter “Key commands” in the Operation Manual.

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. Below follow a few examples.

Adding tracks

When you select one of the Add Track options on the Project menu, the following dialog opens:



The Add Track dialog for audio tracks

Click the Browse button to expand the dialog to show the Results list (as you can find it in the MediaBay). However, only file types that can be used in this context are shown.



You can also apply track presets to existing tracks. The dialog that opens in this case is the same as above.

Applying effect presets

When you have added an insert effect, you can choose from a variety of presets via the Presets pop-up menu for the effect slot.

The Preset browser opens:



Applying instrument presets

When working with VST instruments, you can choose from a variety of presets via the Presets pop-up menu.

The Preset browser opens:



VST presets for instruments can be divided into two groups: “presets” containing the settings of the whole plug-in (for multi-timbral instruments, this means the settings for all sound slots as well as the global settings) and “programs” containing only the settings for one program (for

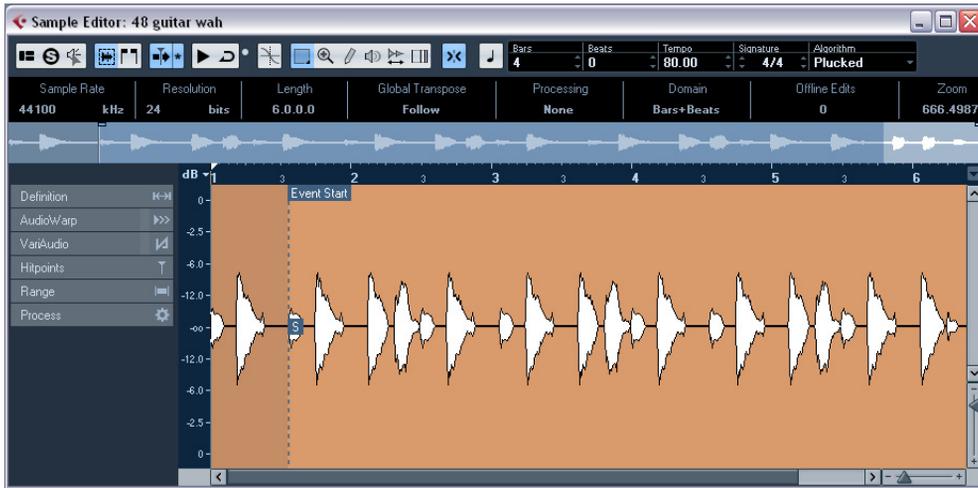
multi-timbral instruments, this means only the settings for one sound slot). In the MediaBay, they can be recognized by their icons. This way, you can see directly whether a VST preset contains a single sound or more.

Icon	Description
	This preset contains settings for all loaded programs.
	This program only contains settings for the first or the selected instrument slot.

4

The 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 or applying effects. This editing is “non-destructive”: The actual file (if created or imported from outside the project) will remain untouched so that you can undo modifications or revert to the original settings at any time using the Offline Process History dialog. For more information see the chapter “Audio processing and functions” in the Operation Manual.

The Sample Editor also contains most of the AudioWarp related functions, i.e. the realtime time stretching as well as the pitch-shifting functions in Cubase. These can be used to match the tempo of audio loops to the project tempo (see “[AudioWarp: Tempo matching audio](#)” on [page 47](#)).

Another special feature of the Sample Editor is hitpoint detection. Hitpoints allow you to create “slices”, which can be useful in many situations, for example, if you want to change the tempo without affecting the pitch (see “[Working with hitpoints and slices](#)” on [page 53](#)).

The VariAudio features allow you to edit monophonic vocal recordings in pitch and time, as easily as editing MIDI in the Key Editor. In these realtime pitch modifications the transitions are kept so that the sound remains natural. The pitch detection and correction is “non-destructive”, i.e. you can always undo modifications or revert to the original versions, see “[VariAudio](#)” on [page 57](#) for details.

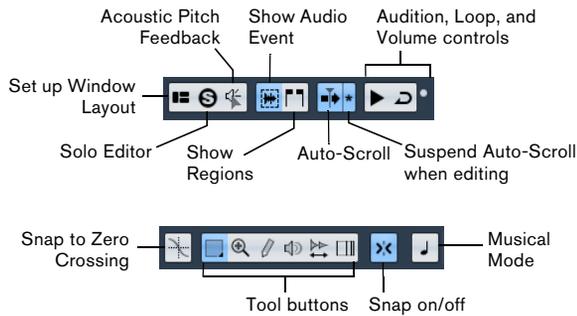
⇒ The term “loop” is used throughout this chapter and in this context usually means an audio file with a musical time base. That means that the length of the loop represents a certain number of bars and beats at a certain tempo. Playing the loop back at the right tempo in a cycle set to the correct length will produce a continuous loop without gaps.

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.

⇒ Double-clicking an audio part in the Project window opens the Audio Part Editor, even if the part contains a single audio event only. For more information, see the chapter “The Audio Part Editor” in the Operation Manual.

The toolbar



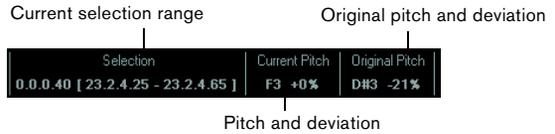
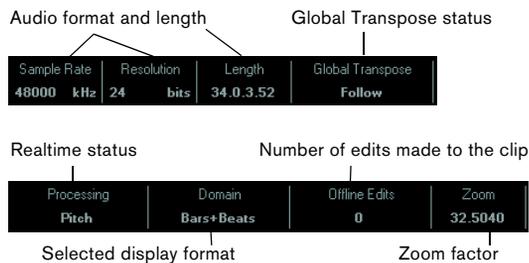
To the right of the tools, the estimated length of your audio file is displayed in bars and beats (PPQ) together with the estimated tempo and the time signature. If you want to use Musical Mode, always verify that the length in bars corresponds to the audio file you imported. If necessary, listen to your audio and enter the correct bar length. The Algorithm pop-up menu allows you to select an algorithm for the realtime time stretching (see [“Selecting an algorithm for the flattening”](#) on [page 67](#)).

Bars	Beats	Tempo	Signature	Algorithm
4	0	80.00	4/4	Plucked

You can customize the toolbar by right-clicking it and using the context menu to hide or show items. For further information about configuring the toolbar, see the chapter [“Customizing”](#) in the Operation Manual.

The info line

The info line is displayed below the toolbar. It shows information about the audio clip:



Initially, length and position values are displayed in the format specified in the Project Setup dialog. For information about configuring the info line, see the chapter [“Customizing”](#) in the Operation Manual.

- 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.

For more information on the handling of the various Inspector tabs, see the chapter [“The Project Window”](#) in the Operation Manual.

The Definition tab



The Definition tab helps you to adjust the audio grid and define the musical context of your audio. This is useful if you have an audio loop or audio file that you want to match to the project tempo, see [“AudioWarp: Tempo matching audio”](#) on [page 47](#). If the Definition tab is open, a second ruler is displayed, showing the musical structure of your audio.

The AudioWarp tab

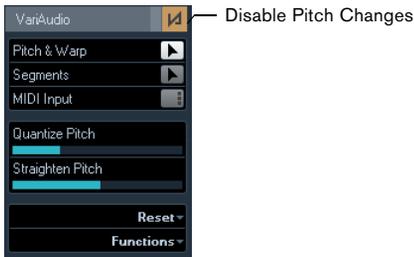


The AudioWarp tab lets you perform timing settings for your audio. This includes applying swing and manually changing the rhythm of the audio by dragging beats to time positions in the grid (see [“Free Warp”](#) on [page 51](#)).

- If you click the “Disable Warp Changes” button, any warp modifications you have made are disabled, allowing you to compare the modified sound with the original sound of your audio.

However, the display does not change. The time stretch applied by the Musical Mode is not disabled by this. “Disable Warp Changes” is deactivated when you reset your warp operations or when you close the Sample Editor. It will not be recalled when reopening the Sample Editor.

The VariAudio tab



On this tab you can edit single notes of your audio file and change their pitch and/or timing, in a way that is similar to the editing of MIDI notes (see [“Understanding the waveform display in VariAudio”](#) on [page 57](#)). Furthermore, you can extract MIDI from your audio (see [“Functions – Extract MIDI...”](#) on [page 66](#)).

- If you click the “Disable Pitch Changes” button, any pitch modifications you have made are disabled, allowing you to compare the modified sound with the original sound of your audio.

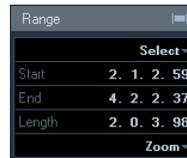
However, the display does not change. “Disable Pitch Changes” is deactivated when you reset your pitch or warp operations or when you close the Sample Editor. It will not be recalled when reopening the Sample Editor.

The Hitpoints tab



On this tab, the transients or hitpoints of the audio can be marked and edited (see [“Working with hitpoints and slices”](#) on [page 53](#)). 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 Range tab



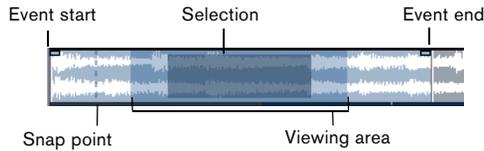
On this tab you will find functions for working with ranges and selections (see [“Making selections”](#) on [page 43](#)).

The Process tab



This tab regroups the most important audio editing commands from the Audio and Edit menus. For further information on the options contained in the Select Process and Select Plug-in pop-up menus, see the chapter “Audio processing and functions” in the Operation Manual.

The Overview line



The Overview line displays the whole clip. 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.

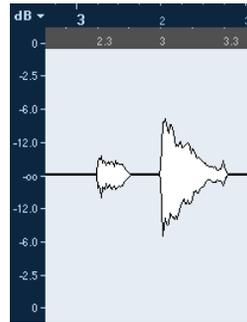
- To view other sections of the clip, move the viewing area in the Overview line. Click in the lower half of the viewing area and drag to the left or right to move it.
- To zoom in or out, horizontally, resize the viewing area by dragging its left or right edge.
- To define a new viewing area, click 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. The ruler is explained in detail in the chapter “The Project window” in the Operation Manual. When the Definition tab is open, an additional ruler displays the musical structure of the audio file.



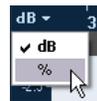
The waveform display and the level scale



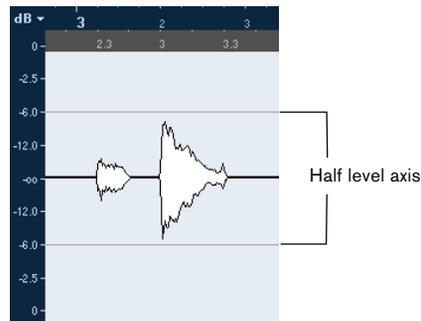
The waveform display shows the waveform image of the edited audio clip according to the wave image style set in the Preferences dialog (Event Display–Audio page), see the chapter “The Project window” in the Operation Manual. To the left of the waveform display a level scale is shown, indicating the amplitude of the audio.

- 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.



- 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.



Operations

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 (see the chapter “The Project window” in the Operation Manual). 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:

Option	Description
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.

- When the VariAudio tab is active (see “VariAudio” on [page 57](#)), you can also zoom by holding down [Alt]/[Option] while drawing a selection rectangle around the segments that you want to zoom in on. You can zoom out by holding down [Alt]/[Option] and clicking in an empty area of the waveform.
 - The current zoom setting is shown in the info line, as a “samples per screen pixel” value.
- ⇒ You can zoom in horizontally to a scale of less than one sample per pixel! This is required for drawing with the Pencil tool (see “Drawing in the Sample Editor” on [page 46](#)).

- 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.

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.

⇒ When auditioning, audio is routed to the Control Room (if activated) or to the Main Mix (the default output bus).



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.

⇒ There is a separate Play button for auditioning regions, see “Auditioning regions” on [page 46](#).

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 Acoustic Feedback



If you activate the “Acoustic Pitch Feedback” button on the toolbar, the audio will be played back when you edit it vertically, i.e. when you change the pitch. This way you can easily audition your modifications.

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.

Scrubbing



The Scrub tool allows you to locate positions in the audio by playing back, forwards, or backwards, at any speed:

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.

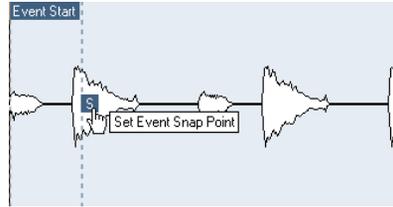
By default, the snap point is set at the beginning of the audio event, but often it is useful to move the snap point to a “relevant” position in the event, such as a downbeat.

To adjust the snap point, proceed as follows:

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. 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).

- ⚠ When you set the grid start on the Definition tab, the snap point is moved to the grid start (see “Manual Adjust” on page 49).

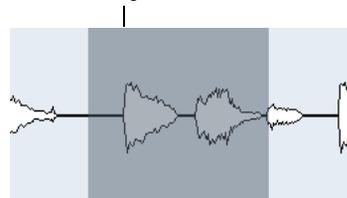
To open a clip in the Sample Editor, double-click it in the Pool. After having set the snap point you can insert the clip into the project from the Pool or the Sample Editor with the set snap point position.

- ⚠ 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.

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.
- The current selection is indicated in the corresponding fields on the Range tab of the Sample Editor Inspector. You can fine-tune the selection by changing these values. Note that the values are relative to the start of the clip, rather than to the project timeline.

Using the Select menu

On the Select menu on the Range tab and in the Select submenu of the Edit menu you find the following options:

Option	Description
Select All	Selects the whole clip.
Select None	Selects no audio (the selection length is set to “0”).
Select 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). If the VariAudio tab is open and your audio file is split into separate segments (see “Segments mode” on page 59), all segments are selected.
Locators to Selection (Range tab only)	Sets the locators to encompass the current selection. This is available if you have selected one or several events or made a selection range.
Locate Selection (Range tab only)	Moves the project cursor to the beginning or end of the current selection. For this to be available, you must have selected one or more events or parts, or made a selection range.
Loop Selection (Range tab only)	This activates playback from the start of the current selection and keeps starting over again when reaching the selection end.
From Start to Cursor (Edit menu only)	Selects all audio between the clip start and the project cursor.
From Cursor to End (Edit menu only)	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.
Equal Pitch - all Octaves/ same Octave	This function requires that the audio event has been analyzed using the VariAudio features and that one or several notes are selected. These options select all notes of this event that have the same pitch as the currently selected note(s) (in any octave or in the current octave).

Option	Description
Left Selection Side to Cursor (Edit menu only)	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. This function is not available for VariAudio segments.
Right Selection Side to Cursor (Edit menu only)	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). This function is not available for VariAudio segments.

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.

⇒ 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).

- Any changes to the clip are shown in the Offline Process History, making it possible to undo them later (see the chapter “Audio processing and functions” in the Operation Manual).

Cut, Copy, and Paste

The Cut, Copy, and Paste commands (on the Edit menu, on the Process tab of the Sample Editor Inspector, or in 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, on the Process tab of the Sample Editor Inspector, or in 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 Edit menu, on the Process tab of the Sample Editor Inspector, or in 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 (see the chapter “Audio processing and functions” in the Operation Manual).

Processing

The Processing features (on the Select Process menu, on the Process tab of the Sample Editor Inspector, or in the Process submenu of the Audio menu) can be applied to selections in the Sample Editor, as well as the effects (on the Select Plug-in menu on the Process tab of the Sample Editor Inspector or in the Plug-ins submenu of the Audio menu). For more information, see the chapter “Audio processing and functions” in the Operation Manual.

Creating a new event from the selection using drag & drop

To create a new event that plays only the selected range, proceed as follows:

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

To extract a selection from an event and either create a new clip or a new audio file, proceed as follows:

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

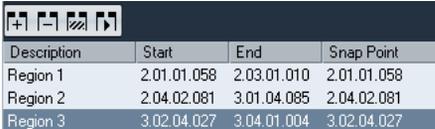
Regions are sections within a clip. One of the main uses for regions is Cycle recording, in which the different “takes” are stored as regions (see the chapter “Recording” in the Operation Manual). You can also use this feature for marking important sections in the audio clip. Regions can be dragged into the Project window from the Sample Editor or the Pool to create new audio events.

Regions are best created, edited, and managed in the Sample Editor.

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	2.01.01.058	2.03.01.010	2.01.01.058
Region 2	2.04.02.081	3.01.04.085	2.04.02.081
Region 3	3.02.04.027	3.04.01.004	3.02.04.027

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.

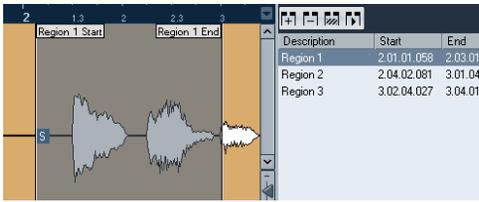
- When you click on a region in the regions list, it is instantly displayed in the Sample Editor.
- To remove a region from a clip, select it in the list and click the Remove Region button above the list.

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. For further information on hitpoints, see [“Working with hitpoints and slices”](#) on [page 53](#).

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.

⇒ 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

To create new audio events from regions using drag & drop, proceed as follows:

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.

A new event is created.

- You can also use the “Events from Regions” function from the Advanced submenu of the Audio menu (see the chapter “The Project window” in the Operation Manual).

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, see the chapter “The Pool” in the Operation Manual.

Drawing in the Sample Editor

It is possible to edit the audio clip at sample level by drawing with the Pencil tool. This can be useful if you need to manually edit out a spike or click, etc.

Proceed as follows:

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 Pencil tool.

3. Click and draw at the desired position in the waveform display.

When you release the mouse button, the edited section is automatically selected.

⇒ The Pencil tool cannot be used when the VariAudio tab is open.

Options and settings

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.

- In this mode, you can adjust the start and end of the event in the clip by dragging the event handles in the waveform display.

⚠ 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.

⇒ 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.

⇒ If hitpoints have been calculated, these are also taken into account when snapping to zero crossings.

⇒ 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.

⇒ This setting is independent of the Auto-Scroll setting in the Project window toolbar or other editors.

AudioWarp: Tempo matching audio

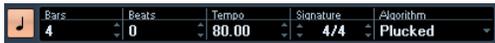
AudioWarp means realtime time stretching functions in Cubase. The main AudioWarp features are tempo matching audio loops to the project tempo and matching up an audio clip with fluctuating tempo to a fixed tempo.

Musical Mode

If you want to tempo match an audio loop to the project tempo, you will normally work with loops with straight beats. In this case you only need to activate the Musical Mode on the toolbar.

The Musical Mode is one of the key AudioWarp features. It allows you to lock audio clips to the project tempo by using realtime time stretching. This is very useful if you want to use loops in your project without worrying too much about timing.

When Musical Mode is activated, audio events will adapt to any tempo changes in Cubase, just like MIDI events.



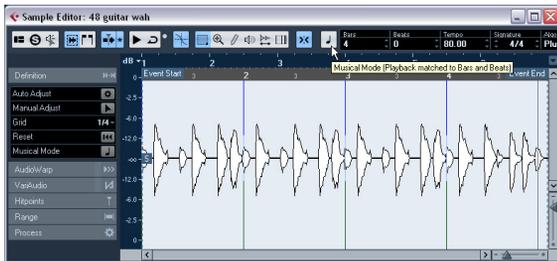
You can activate Musical Mode on the AudioWarp tab, the Definition tab, and the toolbar.

It is also possible to activate/deactivate Musical Mode from within the Pool by clicking the corresponding checkbox in the Musical Mode column.

To tempo match an audio loop to the project tempo, proceed as follows:

1. Import your loop into the project and double-click it to open the Sample Editor.

If you open the Definition tab and take a look at the rulers, you will see that the project tempo grid (upper ruler) and the grid of your audio (lower ruler) do not match.



2. Activate the Musical Mode button on the toolbar. Your clip is warped and stretched automatically to adapt it to the project tempo. The rulers reflect the change.



In the Project window, the audio event is now shown with a note symbol and a double arrow in the bottom right corner to indicate that Musical Mode is activated.

The Musical Mode state is saved with the project. This allows you to import files into the project with Musical Mode already activated. The tempo is also saved when exporting files.

⚠ 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.

Auto Adjust

If you want to use an audio file with unknown tempo or if the beat of your loop is not straight, you have to change the “definition” of this audio file first. This is done with the Auto Adjust function on the Definition tab of the Sample Editor Inspector.

The Auto Adjust function quantizes your audio automatically, i.e. the transients are moved to exact note values in the audio grid.

Proceed as follows:

1. Open the Sample Editor and define a selection range for your audio clip.

Alternatively, you can define a range by setting the start and end of the audio event.



2. Open the Definition tab and click the Auto Adjust button.

The transients, i.e. the significant positions of your audio are moved to exact note values in the audio grid.



3. Activate the Musical Mode button on the toolbar.

Your clip is warped and stretched automatically to adapt it to the project tempo. The rulers reflect the change.

You can see that the event snap point is moved to the start of the selected range. If you take a look at the lower ruler, you will see that red vertical lines are shown. These indicate that your audio has been aligned to bar and beat positions.

Manual Adjust

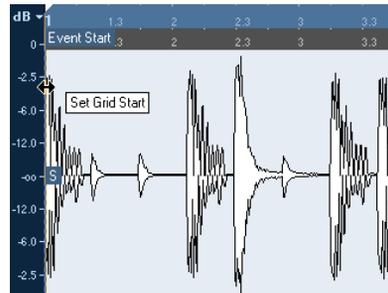
You might have a very special loop where the automatic function does not lead to satisfying results. In this case you can manually adjust the grid and tempo of your audio file. Proceed as follows:

1. Open the Definition tab in the Sample Editor Inspector and activate the Manual Adjust tool.
2. Select a suitable value from the Grid pop-up menu. This determines the grid resolution for your audio. The vertical lines of the grid represent bar positions, and the red vertical lines beat positions.



3. Move the mouse pointer to the beginning of the audio file until the tooltip "Set Grid Start" is displayed.

The mouse pointer turns into a double arrow to indicate that you can edit the time grid for the audio file.

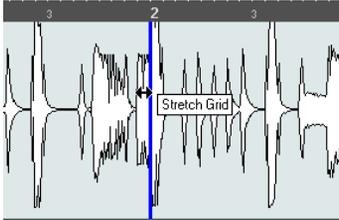


4. Click and drag to the right to set the grid start at the first downbeat, and release the mouse button. The lower ruler (for the audio) changes to reflect your edits.
5. Audition the file to determine where the second bar in the sample begins.
6. In the upper part of the waveform, move the mouse pointer to the vertical line nearest to the second bar so that the tooltip "Stretch Grid" and a blue vertical line are shown.

The functionality of the Manual Adjust tool changes depending on its position, e.g. if applied in the lower part of the waveform on a vertical line, it is used to set a bar position, see below.

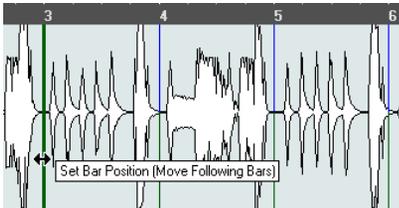
7. Click and drag the blue vertical line to the left or right to the position of the first downbeat in the second bar and release the mouse button.

The beginning of the next bar is set, and all following bars are stretched or compressed by the same amount.



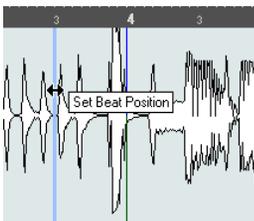
8. Check the positions of the following bars and, if necessary, move the mouse pointer over the grid lines in the lower part of the waveform until the tooltip “Set Bar Position (Move Following Bars)” and a green vertical line are shown.

This allows you to set the bar positions. When you drag the mouse, the beginning of the next bar is set, and the tempo of the previous bar is changed.



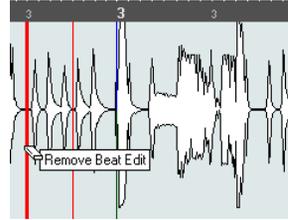
9. Now have a look at the single beats in between the bars and, if necessary, move the mouse pointer to a beat position to adjust them.

The Set Beat Position function is displayed with a light blue line. Drag it until the single beat position is aligned with the waveform, and release the mouse button.



- If you are not satisfied with a specific edit, you can hold down any modifier key and click on the adjusted grid line (bar or beat).

The Eraser tool appears together with a tooltip indicating that you can remove your edit.



When you are done, you can activate Musical Mode to adjust your audio loop to the project tempo.

Applying swing

If you find that your audio sounds too straight, e.g. after having quantized it with the Auto Adjust function, you can add swing. Proceed as follows:

1. Activate Musical Mode.
2. On the AudioWarp tab, select a suitable grid resolution from the Resolution pop-up menu. This defines the positions that the swing is applied to. If you select 1/2, the swing is applied in steps of half notes, if you select 1/4, it is applied in steps of quarter notes, etc.



3. Move the Swing fader to the right to offset every second position in the grid. This creates a swing or shuffle feel.

Depending on how far you move the fader to the right and what grid resolution you chose, this function offers everything from half-note swing to 64th-note swing.

Selecting an algorithm for realtime playback

In the Algorithm pop-up menu on the toolbar you can select the algorithm preset to be applied on realtime playback. This setting affects warp changes in Musical Mode, FreeWarp, Swing, as well as VariAudio warping and pitching (only the Solo preset can be used).



On this pop-up menu you can find various options that govern the audio quality of the realtime time stretching. There are presets that allow you to manually set warp parameters:

Option	Description
Drums	This mode is best for percussive sounds, because it does not change the timing of your audio. Using this option for pitched audio will lead to noticeable artifacts. In this case, you can try the Mix mode.
Plucked	Use this mode for audio with transients and a relatively stable spectral sound character (e.g. plucked instruments).
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.
Vocals	This mode is suitable for slower signals with transients and a prominent tonal character (e.g. vocals).
Mix	This mode preserves the rhythm and minimizes the artifacts for pitched material which does not meet the above criteria (i.e. with a less homogenous sound character). This is selected by default for audio that is not categorized.
Advanced	This allows for a manual tweaking of the time stretching parameters. By default, the settings that are shown when you open the dialog are those of the last preset used (except if the Solo mode has been selected, see below). The Advanced settings are described more in detail below this table.
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 Advanced menu item, a dialog opens where you can manually adjust the three parameters that govern the sound quality of the time stretching:

Parameter	Description
Grain size	The realtime 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.

Free Warp

The Free Warp tool allows you to create warp tabs. Warp tabs are a kind of marker or anchor that can be attached to musically relevant time positions in an audio event, for example the first beat of every bar. Warp tabs can be dragged to the corresponding time positions in the project, and the audio will be stretched accordingly.



⚠ If the VariAudio tab is open, only the warp handles are shown.

You can also use warp tabs for further tweaking after having activated Musical Mode.

⚠ When you activate or deactivate Musical Mode or select another Resolution value, all your warp modifications will be lost.

Using the Free Warp tool

Warp tabs are created using the Free Warp tool on the AudioWarp tab of the Sample Editor, but can also be created from hitpoints (see [“Creating warp tabs from hitpoints”](#) on [page 53](#)). In this example, we will show how a file with slightly varying tempo can be locked to a steady tempo by using warp tabs. It illustrates the general methods of using warp tabs and the Free Warp tool. But you can of course use warp tabs for other operations than aligning downbeats to grid positions. With the Free Warp tool, you can literally stretch any region within a sample to any position!

Proceed as follows:

1. Open the audio file that you wish to process in the Sample Editor.
2. Activate the “Snap to Zero Crossing” button on the Sample Editor toolbar.
When you activate this button, warp tabs will snap to zero crossings and hitpoints (if shown).
3. On the Definition tab, click the Auto Adjust button.
4. Line up the audio file so that the first beat of the first bar (in the audio event) starts on the first beat of a bar in the project.
 - If the audio file does not start on a downbeat, you can use the Event Start handle in the Sample Editor and adjust the position in the Project window so that the first downbeat in the sample is aligned with the first beat of a bar in the grid.Now the first musical downbeat should be aligned with the first beat of a bar in the project.

The next step is to find out where the first warp tab needs to be added. Activate the metronome click on the Transport panel and play back your audio clip to determine positions where its tempo drifts from the project tempo.

5. Play back the audio file and determine where the first beat of a bar in the audio event does not match the corresponding ruler position in the project.
If you find it difficult to pinpoint an exact position in the audio event, you can use the Scrub tool and/or zoom in the view.
6. On the AudioWarp tab, select the Free Warp tool, place the pointer at the position of the beat that you want to adjust, click, and hold.
When you place the mouse pointer in the waveform display, it changes to a clock with arrows on either side and a vertical line in the middle, which represents the pointer.

7. With the mouse button still pressed, drag the warp tab to the desired position in the ruler and release the mouse button.

A warp tab is added and your beat should be perfectly aligned with the corresponding position in the project. If the position where you clicked was off, you can adjust it by dragging the handle.

⇒ You can also first add warp tabs at the relevant musical positions and change their positions later, see [“Editing warp tabs”](#) on [page 52](#).

Next to the warp tab handle in the ruler, a number is shown. This number indicates the warp factor, i.e. the amount of stretch. Warp factor numbers higher than 1.0 indicate that the audio region preceding the warp tab is expanded and will play back slower. Warp factor numbers lower than 1.0 indicate that the audio region preceding the warp tab is compressed and will play back faster.

8. Repeat the described steps to align the first beat in each bar to the corresponding ruler position.
⇒ You only have to add warp tabs where the downbeat in the audio file drifts from the ruler position and/or if you want to lock a warp tab so that it is not moved when editing other points.

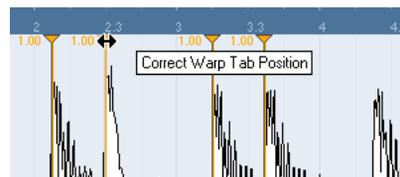
Editing warp tabs

Moving the destination of existing warp tabs

To move the destination position of a warp tab (and thus stretch or compress the audio), select the Free Warp tool and position the pointer on the warp line in the waveform, click and drag.

Moving the insert position of existing warp tabs

If you wish to change the insert position of a warp tab in the audio, click and drag the warp tab handle in the ruler. This will change the warping.



Disabling warp tabs

You can disable all warp modifications by clicking the “Disable Warp Changes” button on the AudioWarp tab or by setting up and using the “VariAudio - Disable Warp Changes” key command in the Key Commands dialog, Sample Editor category (see the chapter “Key Commands” in the Operation Manual).

Deleting warp tabs

To delete a warp tab, hold down [Alt]/[Option] so that the pointer becomes an eraser and click on the warp tab. To delete several warp tabs, hold down [Alt]/[Option] while drawing a selection rectangle.

Resetting warp modifications

To reset your Free Warp edits, click the Reset button on the AudioWarp tab. This also resets the “Disable Warp Changes” button on the same tab.

⇒ If Musical Mode is activated, only Free Warp edits are reset.

Creating warp tabs from hitpoints

You can also create warp tabs from hitpoints by selecting “Create Warp Tabs from Hitpoints” on the Realtime Processing submenu of the Audio menu.

Working with hitpoints and slices

Hitpoint detection is a special feature of the Sample Editor. It detects attack transients in an audio file and adds a type of marker, i.e. a “hitpoint”, at each transient. These hitpoints allow you to create “slices”, where each slice ideally represents each individual sound or “beat” in a loop (drum or other rhythmic loops work best with this feature). When you have successfully sliced the audio file, you can do a number of useful things with it:

- Change the tempo without affecting the pitch.
- Extract the timing (a groove map) from a drum loop. The groove map can then be used to quantize other events.
- Replace individual sounds in a drum loop.
- Edit the actual playing in the drum loop without affecting the basic feel.
- 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, replacing, or quantizing slices.
- Apply processing or effects to individual slices.
- Create new files from individual slices using the “Bounce Selection” function on the Audio menu.
- Transpose in realtime and stretch slices.
- Edit slice envelopes.

⇒ Hitpoints are only displayed in the waveform if the Hitpoints tab is open.

Using hitpoints

The main functionality of using hitpoints to slice up a loop is to make a loop fit the tempo of a song, or alternatively to create a situation that allows the song tempo to be changed while retaining the timing of a rhythmic audio loop, just like when using MIDI files.

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 in the loop should have a noticeable attack.
Slow attacks, legato playing, etc. may not produce the desired result.
- Poorly recorded audio might be difficult to slice correctly. In these cases, try to normalize the files or to remove DC Offset.
- There may be problems with sounds drowned in smearing effects, like short delays.

Calculating hitpoints and slicing a loop

Before proceeding, check if your audio file is suited for slicing using hitpoints, see above. Proceed as follows:

1. Open the Hitpoints tab and select an option from the Use pop-up menu.

The Use pop-up menu on the Hitpoints tab affects which hitpoints are shown and is a useful tool for removing unwanted hitpoints.

The following options are available:

Option	Description
All	All hitpoints are shown (taking the Sensitivity slider into account).
1/4, 1/8, 1/16, 1/32	Only hitpoints that are close to the selected note value positions within the loop are shown (e.g. close to exact sixteenth note positions). Again, the Sensitivity slider is taken into account.
Metric Bias	This is like the “All” mode, but all hitpoints that are close to even meter divisions (1/4, 1/8, 1/16, etc.) get a “sensitivity boost” – they are visible at lower sensitivity settings. This is useful if you are working with dense or cluttered material with a lot of hitpoints, but you know that the material is based on a strict meter. By selecting Metric Bias it is easier to find the hitpoints close to the meter position (although most other hitpoints are also available, at higher sensitivity settings).

⇒ If you select one of the options of the Use pop-up menu (except “All”), a second ruler that displays the musical structure of the audio file is shown below the ordinary ruler.

2. Move the Sensitivity slider to the right to add hitpoints or to the left to remove unwanted hitpoints until one individual sound is played between two hitpoints.

If your main reason for slicing the loop is to change the tempo, you generally need as many slices as you can get, but never more than one per individual “hit” in the loop. If you want to create a groove, try to get approximately one slice per eighth note, sixteenth note, or whatever the loop requires (see “[Creating groove quantize maps](#)” on [page 55](#)).

In the next step, the loop will be adapted to the project tempo set in Cubase.

3. On the Hitpoints tab, click the Create Slices button or select “Create Audio Slices from Hitpoints” 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).

⚠ When you create slices, all events referring to the edited clip are also replaced.

- The loop is automatically adapted to the project tempo. This takes the specified loop length into account: e.g., if the loop 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.

4. Activate cycle playback on the Transport panel.

The loop should now play back seamlessly at the tempo set in the project!

Hitpoints and tempo settings

The musical time base setting and the project tempo affect how your loops are played back.

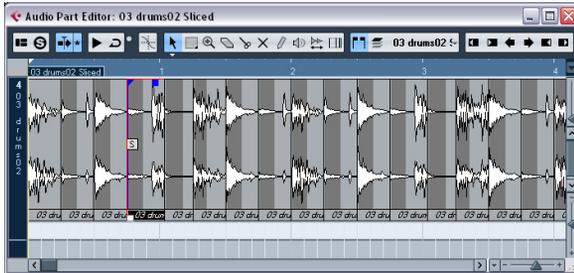
- Make sure that the “Musical time base” button in the track list or Inspector is activated (the button shows a note symbol – see the chapter “The Project window” in the Operation Manual). This way the loop will follow any further tempo changes.

- If the project tempo is slower than the original tempo of the loop, there may be audible gaps between each slice event in the part.

To remedy this, you can use the Close Gaps function on the Advanced submenu of the Audio menu, see “[Close Gaps](#)” on [page 56](#). Also consider activating auto fades for the corresponding audio track – fade-outs set to about 10ms will help eliminate any clicks between the slices when you play back the part. For more information, see the chapter “Fades, crossfades and envelopes” in the Operation Manual.

- If the project tempo is higher than the loop's original tempo, you may want to activate auto crossfades for the track.

You can use the Close Gaps functions in this case as well, see ["Close Gaps"](#) on [page 56](#).



The slices in the Audio Part Editor. Here, the project tempo was higher than the loop's original tempo – the slice events overlap.

Setting hitpoints manually

If you cannot get the desired result by adjusting the sensitivity, try to set and edit hitpoints manually.

Proceed as follows:

1. Zoom in on the waveform at the point where you wish to add a hitpoint.
2. Select the Edit Hitpoints tool to audition the area and make sure that the start of the sound is in view.
3. Activate "Snap to Zero Crossing" on the Sample Editor toolbar.

By finding zero crossings in the waveform (positions where the amplitude is close to zero), manually added slices will not insert any clicks or pops. All hitpoints calculated by the program are automatically placed at zero crossings.

- ⚠ "Snap to Zero Crossing" may alter the timing. In some cases it is better to deactivate it, especially if you just want to generate a groove quantize map. However, if you create slices afterwards, auto fades are necessary.

4. Press [Alt]/[Option] so that the mouse pointer changes to a pencil tool and click just before the start of the sound. A new hitpoint appears. Manually added hitpoints are locked by default.

- If you notice that a hitpoint was either placed too far away from the start of the sound or too far into the sound, you can move it by dragging the hitpoint to the new position.

5. Audition the slices 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.

- If you hear a single sound split into two slices you can disable an individual slice by clicking on the handle of the corresponding hitpoint.

The hitpoint handle gets smaller and its line disappears to indicate that it is disabled. To reactivate a disabled hitpoint, click on the hitpoint handle again.

- If you hear "double hits" (e.g. a snare hit being followed by a hi-hat hit within the same slice), you can add further hitpoints manually, or you can move the Sensitivity slider to the right until the hitpoint appears and lock the hitpoint by holding down [Ctrl]/[Command] or [Shift] and clicking on its handle.

Locked hitpoints are displayed in a darker color. After locking the hitpoint you can drag the sensitivity slider to the original setting and the locked hitpoint will remain shown. You can unlock a locked hitpoint by clicking on its handle.

- If you want to delete a hitpoint, hold down [Ctrl]/[Command] and click on it. If you want to delete several hitpoints, hold down [Ctrl]/[Command] and drag a selection rectangle.

You can also hold down [Shift] and click to delete hitpoints.

Creating groove quantize maps

You can generate groove quantize maps based on the hitpoints that you have created in the Sample Editor.

Groove quantizing is not meant for correcting errors, but for creating rhythmic feels. This is done by comparing your recorded music with a "groove" (a timing grid generated from the file) and moving the appropriate notes so that their timing matches the one of the groove. In other words, you can extract the timing from an audio loop and use it for quantizing MIDI parts (or other audio loops, after slicing them).

Proceed as follows:

1. Check the audio tempo and define the audio grid.

2. Create and edit hitpoints as described above.

Try to get approximately one slice per eighth note, sixteenth note, or whatever the loop requires. It can be helpful to use one of the note value-based options on the Use pop-up menu (see ["Calculating hitpoints and slicing a loop"](#) on [page 54](#)).

- ⇒ You do not have to create slices – just set up the hitpoints.

3. When you have finished setting the hitpoints, click the Create Groove button on the Hitpoints tab or select “Create Groove Quantize from Hitpoints” from the Hitpoints submenu of the Audio menu.

The groove is extracted.

4. If you now pull down the Quantize Type pop-up menu in the Project window you find an additional item at the bottom of the list, with the same name as the file from which you have extracted the groove.

This groove can now be selected as a base for quantizing, just like any other quantize value, see the chapter “MIDI processing” in the Operation Manual.

5. If you want to save the groove, open the Quantize Setup dialog and store it as a preset.

⇒ You can also create grooves from a MIDI part by selecting the part and dragging it on the grid display in the middle of the Quantize Setup dialog or by selecting “Part to Groove” from the Advanced Quantize submenu of the MIDI menu.

Other hitpoint functions

On the Hitpoints tab of the Sample Editor Inspector and on the various submenus of the Audio menu, you will also find the following functions:

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 (see the chapter “The Project window” in the Operation Manual). Markers can be useful to snap to hitpoints, e.g. for locating hitpoints and for using the Time Warp tool (see the chapter “Editing Tempo and signature” in the Operation Manual).

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

When you wish to create separate events according to the hitpoints for a file, you can click the Create Events button on the Hitpoints tab and use any method you like to set hitpoints.

⇒ The created slices are shown as separate events in the Project window.

Close Gaps

This function from the Advanced submenu of the Audio menu is useful if you have sliced a loop for tempo changes and you change the project tempo. Lowering the project tempo below the loop’s original tempo creates gaps between the slices – the slower the tempo, the wider the gaps. Increasing the project tempo over the loop’s original tempo compresses the slices using the time stretch function and creates overlaps. In both cases, you can use the Close Gaps function.

Proceed as follows:

1. Set the desired tempo.
2. In the Project window select the part containing the slices.
3. From the Advanced submenu of the Audio menu select “Close Gaps”.

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.

4. The waveform is redrawn and the gaps are closed! 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 function, undo the Close Gaps operation or start over again, using the original, unstretched file.

⇒ In the Audio Part Editor or Project window you can also use Close Gaps on audio events. This will stretch the audio event to the start position of the next event.

VariAudio

With the AudioWarp features, editing audio in the time domain has become significantly easier. However, editing pitch was limited to having just one single numeric “transpose” value per event or part.

VariAudio offers completely integrated vocal editing and pitch alteration of individual notes in monophonic vocal recordings and can solve intonation and timing problems with only a few mouse clicks. It was developed and optimized specifically to be used with monophonic vocal recordings. Though the detection and stretching of notes of other monophonic audio recordings, such as those of a saxophone, may work well, the quality of the end result depends greatly on the generic condition and structure of the recording’s texture.

And how does it work? First, the vocal line is analyzed and split into segments shown as graphic representation of the notes sung. After the detection process is complete, the recognized notes can be modified entirely “non-destructively” so that any modifications to the audio material can be undone.

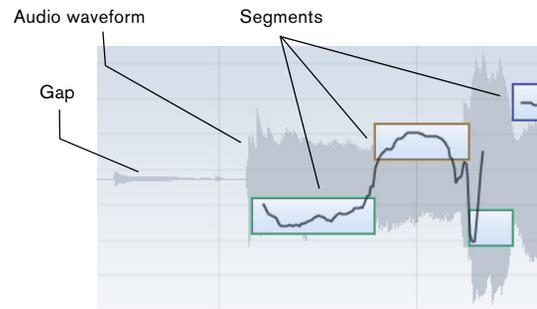
VariAudio allows you to change your audio on the vertical axis (see “[Changing the pitch](#)” on [page 61](#)) and on the horizontal axis (see “[Warping segments](#)” on [page 64](#)).

Understanding the waveform display in VariAudio

When you open monophonic vocal recordings in the Sample Editor and activate the Segments or the Pitch & Warp tool on the VariAudio tab, your audio is analyzed and segmented to display the tonal portions, i.e. the notes sung or played. This process is called segmentation. The segmentation allows you to easily associate the audio with your lyrics and to introduce pitch and timing changes.



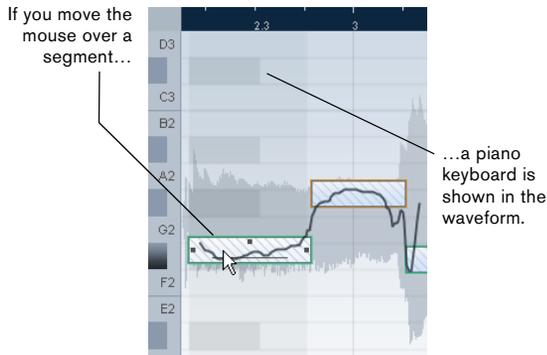
In between the different segments you may find gaps where non-tonal portions have been detected. Such gaps can be caused by non-tonal portions of the audio, e.g. breath sounds.



At the beginning of the waveform, you can see a gap where no segment is shown.

⇒ The audio waveform displayed on the VariAudio tab is always shown as mono, even if you have opened a stereo or multi-channel file.

The vertical position of a segment indicates its average pitch. If the Pitch & Warp tool is active and you move the mouse pointer over a segment, a piano keyboard is displayed, showing the found pitches.



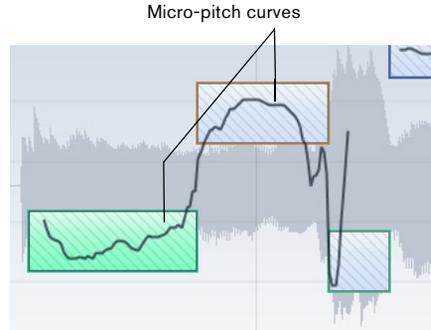
Furthermore, if you move the mouse pointer over a segment and the zoom factor is high enough, the average pitch – note name and fine tuning in cent steps (100ths of a semitone) – is shown on top of the segment. When you select a segment, this is also shown in the info line.



Note pitches represent the perceived fundamental frequency of a sound. The note A4 is perceived to be of the same pitch as a sine wave of 440Hz. The notation of pitches is a logarithmic frequency scale. The table below shows the relation between pitch (note name) and frequency in Hz:

C4	C#4/ Db4	D4	D#4/ Eb4	E4	F4	F#4/ Gb4
261.63	277.18	293.66	311.13	329.63	349.23	369.99
G4	G#4/ Ab4	A4	A#4/ Bb4	B4	C5	
392.00	415.30	440.00	466.16	493.88	523.25	

The average pitch of a segment is calculated from its micro-pitch curve. Micro-pitch curves represent the progression of the pitch for the tonal portion of the audio.



The horizontal position of a segment indicates the time position and the length.

You can navigate through the segments by using the left/right arrow keys on your computer keyboard.

You can zoom in on the segments that you want to edit by holding down [Alt]/[Option] while drawing a selection rectangle. To zoom out hold down [Alt]/[Option] and click in an empty area of the waveform. If you hold down [Alt]/[Option] and double click in an empty area, the display will be zoomed out to show all segments.

Applying editing, offline processes, and VariAudio

The following offline processes and edits that affect the length of the audio file may lead to the reanalysis of the audio material:

- Options on the Select Process menu, on the Process tab of the Sample Editor Inspector, or in the Process submenu of the Audio menu that can be applied to selections.
- Effect processing using the options on the Select Plug-in menu on the Process tab of the Sample Editor Inspector or in the Plug-ins submenu of the Audio menu (see the chapter “Audio processing and functions” in the Operation Manual).

- Cut, paste, and delete (see [“Editing selection ranges”](#) on [page 44](#)), or drawing notes (see [“Drawing in the Sample Editor”](#) on [page 46](#)).

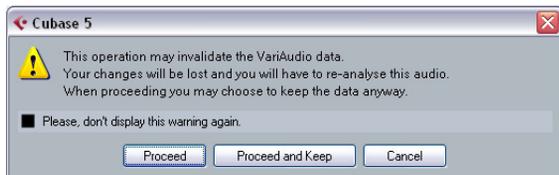
⚠ Because of the reanalysis any existing VariAudio data becomes invalid. Therefore, you should always apply offline processing or edits before using the VariAudio features.

If you apply editing that affects the audio itself (like cutting portions, etc.) to a file containing VariAudio data, the following warning message is displayed:



- If you click “Proceed”, your edits are applied and you will lose your VariAudio data. Click “Cancel” to return to your audio file without applying any changes.

If you apply offline processing to a file containing VariAudio data, the following warning message is displayed:



- If you click “Proceed”, your edits are applied, and you will lose your VariAudio data. Click “Cancel” to return to your audio file without applying any changes.
- If you click “Proceed and Keep”, your edits are applied. Any VariAudio data in the audio file is kept. Offline processes that may not affect existing VariAudio data are Envelope, Fade In/Out, Normalize, or Silence.
- If you activate the “Please don’t display this warning again” option in one of these warning dialogs before proceeding, Cubase will always proceed with the selected option.

You can reactivate the warning messages by deactivating the “Inhibit warning when changing the Sample Data” or “Inhibit warning when applying Offline Processes” options in the Preferences dialog (VariAudio page).

Segments mode

If you activate Segments mode on the VariAudio tab, your audio file is analyzed and split into separate segments.

⚠ Due to the data gained during this process, the audio and thus the size of your project can increase. Furthermore, the analysis of long audio files might take some time.

When you want to change the pitch of audio that includes non-tonal portions, e.g. consonants or effect sounds like reverberation, you may have to edit the segmentation in order to include the non-tonal portions in the segments. Otherwise, pitch modifications will only affect the tonal portions.

Editing the segmentation includes changing the start and end position of a segment, cutting or gluing segments, and moving or deleting them. Just select the section of the file that you want to change, activate Segments mode, and edit the segmentation for the desired section. If you are not satisfied with your changes, you can go back to the original segmentation (see [“Reset”](#) on [page 66](#)).

⚠ Editing the segmentation always leads to a recalculation of the segment’s pitch. Therefore, it is recommended that you edit the segmentation before changing the pitch.

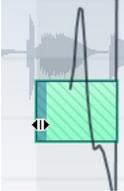
⇒ In Segments mode, the segments are shown with a hatched background. You can toggle between “Pitch & Warp” and “Segments” mode (see [“Pitch & Warp tool”](#) on [page 61](#)) by pressing the [Tab] key.

The following paragraphs list the corrections that can be performed when Segments mode is activated.

Changing the note start or end point

If you find that a note starts or ends too early or too late, e.g. when the reverb of a note or a consonant is not included in the segment, proceed as follows:

1. On the VariAudio tab activate Segments mode.
2. To change the length of a segment, move the mouse pointer over the start/end of the segment.
The mouse pointer becomes a double arrow.



3. Click and drag the segment start/end to the left or right.
The segment length changes accordingly. As the average pitch is recalculated, the segment may jump upwards or downwards. Snap will not be taken into account.

⚠ If the resulting segment pitch cannot be calculated because of an increase in non-tonal data, the segment will be deleted.

⇒ You can drag the segment start/end only until it reaches the start/end of the next segment. Segments cannot overlap each other.

Cutting a segment

If you notice that a segment includes more than one note, proceed as follows:

1. On the VariAudio tab activate Segments mode.
2. Move the mouse pointer over the lower border of the segment that you would like to cut.
The mouse pointer becomes a scissor.



3. Click at the desired position to cut the segment.
The segment is cut accordingly taking Snap into account.

⚠ When the resulting segment pitch cannot be calculated because of an increase in non-tonal data, the segment will be deleted.

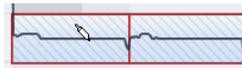
⇒ There is a minimum size for a segment. Very short segments cannot be cut.

Gluing segments

⚠ We recommend to correct the segmentation before pitching. If you glue together segments after changing the pitch (this includes manual pitch modifications, Quantize Pitch, and Straighten Pitch), your modifications are reset and the original pitch will be heard.

If you notice that a single note is spread over two segments, proceed as follows:

1. On the VariAudio tab activate Segments mode.
2. Hold down [Alt]/[Option] and move the mouse pointer over the segment that you want to glue to the next.
The mouse pointer becomes a glue tube.



3. Click to glue the active segment to the next segment.
If several segments are selected, they are all glued together. Snap is not taken into account.

⚠ If the resulting segment pitch cannot be calculated because of an increase in non-tonal data, the segment will be deleted.

Moving segments horizontally

After cutting a segment it may be necessary to move segments horizontally, for example, if you notice that a note is at the wrong position. Proceed as follows:

1. On the VariAudio tab activate Segments mode.
2. Move the mouse pointer over the upper border of the segment.

The mouse pointer becomes a double arrow.



3. Click and drag the whole segment to the left or right. The segment is moved accordingly. If several segments are selected, they are all moved together. Snap is not taken into account.

⚠ If the resulting segment pitch cannot be calculated because of an increase in non-tonal data, the segment will be deleted.

⇒ You can only drag the segment start/end until it reaches the start/end of the next segment. Segments cannot overlap each other.

Deleting segments

Sometimes it might be useful to delete segments. This is the case in situations where you want the original audio to be played back, e.g. for non-tonal portions or consonants.

- You can delete segments by selecting them in Segments mode and pressing [Backspace].

Saving the segmentation

The corrected segmentation is saved with the project, no additional saving is required.

Pitch & Warp tool

If you activate the Pitch & Warp tool on the VariAudio tab, you can change the pitch and the timing of your audio.

⚠ Before changing the pitch or timing of your segments, make sure that the segments you want to change are correct (see [“Applying editing, offline processes, and VariAudio”](#) on page 58).

You can edit the pitch and timing of audio segments for corrective purposes but also creatively. VariAudio allows you to experiment freely with note pitches in order to change the melody with or without preserving a natural sound. Furthermore, you can change the timing of the audio.

⇒ In Pitch & Warp mode, the segments are shown with a plain background. You can toggle between “Pitch & Warp” and “Segments” mode by pressing the [Tab] key.

⇒ There are some restrictions concerning the highest and lowest possible note pitch. You cannot choose note pitches above C5 and below E0.

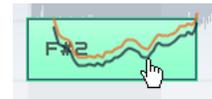
Changing the pitch

If you want to edit the pitch of a segment, proceed as follows:

1. On the VariAudio tab activate the Pitch & Warp tool.

2. Move the mouse pointer over the segment.

The mouse pointer becomes a hand symbol to indicate that you can change the pitch of the segment. If the zoom factor is high enough, a tooltip indicates the found note pitch and the segment’s deviation from this pitch in percent.



There are three different modes that affect the way in which a note will snap to a certain pitch that can be accessed using the following modifier keys:

Option	Description	Default modifier
Absolute Pitch Snapping	Pitches the segment to the next semitone.	None
Relative Pitch Snapping	Snaps the segment in relation to its current deviation in cents, i.e. if the segment has a pitch of C3 and a deviation of 22%, and you move it up by one semitone, it will be pitched to C#3 while keeping the deviation of 22%.	[Ctrl]/[Command]
No Pitch Snapping	Lets you edit the pitch freely.	[Shift]

⇒ The default modifier key can be changed in the Preferences dialog (Editing–Tool Modifier page).

3. Drag the segment up or down to the desired pitch and release the mouse. However, be careful: The more the pitch deviates from the original pitch, the less likely it is that your audio sounds natural.

If the Solo algorithm is not turned on already, a warning appears informing you that Cubase has selected it automatically. The segment is pitched accordingly. While dragging, the original micro-pitch curve of the segment is shown in orange. If several segments are selected, they are all pitched.

You can also use the up/down arrow keys on your computer keyboard to edit the note pitches.

Proceed as follows:

- Use the up/down arrow keys to change the pitch in semitone steps.
- Hold down [Shift] while using the up/down arrow keys to change the pitch in cent steps.

⚠ If you pitch-shift audio events with the Transpose options (see the chapter “The Transpose functions” in the Operation Manual) the transposition is added to the pitch modifications that you introduced with the Pitch & Warp tool, even if this is not reflected in the segmentation display.

Quantize Pitch

You can also quantize the audio pitch upwards or downwards to iteratively reduce the deviation from the nearest semitone position.

Proceed as follows:

1. Select the segments that you want to quantize.
2. Move the Quantize Pitch slider to the right. The selected segments are quantized iteratively.

You can set up a key command for Quantize Pitch in the Sample Editor category of the Key Commands dialog (see the chapter “Key Commands” in the Operation Manual). When using the key command, the segments are directly quantized to the next semitone position.

Tilting the micro-pitch curve

Sometimes changing the pitch of the whole note segment is not enough. In these cases you will have to modify how the pitch changes inside the segment. This is indicated by the micro-pitch curve (see “Understanding the waveform display in VariAudio” on page 57).

⚠ The micro-pitch curve displays the progression of the pitch for the tonal portion of the segment. For non-tonal portions of the audio, micro-pitch curves cannot be shown.

Proceed as follows:

1. On the VariAudio tab, activate the Pitch & Warp tool.
2. To change the micro-pitch of a segment, move the mouse pointer over the top left/right corner of the segment. The mouse pointer becomes an up/down arrow.
3. Drag upwards/downwards with the mouse to change the micro-pitch curve.



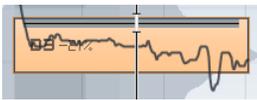
If the pitch falls at the end of the segment...



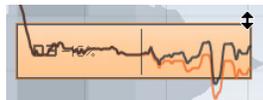
...activate the Pitch & Warp tool, point at the top right corner and drag upwards.

If you want to change the pitch modulation only for the segment start or end, you can set an “anchor point” to specify which part of the segment is affected. Proceed as follows:

1. Move the mouse pointer over the top border of the segment.
The mouse pointer becomes an I-beam symbol.
2. Click at the position where you want to set an anchor.
A vertical line appears at the position where you clicked. A segment can only have one anchor.
3. Move the mouse pointer over the top left/right corner of the segment and drag upwards or downwards to tilt the micro-pitch curve.
The modulation curve is only changed from the segment border to the anchor.

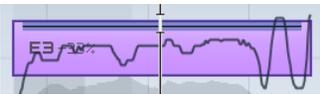


Move the mouse over the top border and click to set an anchor...



...if you only want to compensate for the descending pitch at the end of the segment.

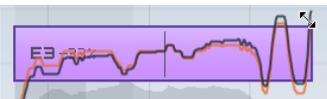
- If you press [Alt]/[Option] while dragging up/down, the tilt anchor is used as an axis around which the micro-pitch curve can be rotated.



If you set a tilt anchor...



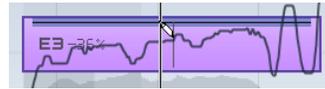
...and press [Alt]/[Option], the mouse pointer becomes a diagonal arrow...



...to indicate that you can rotate the micro-pitch curve.

4. Repeat the steps above to set anchors and tilt the micro-pitch curve until you are satisfied with the result.

- If you want to remove a tilt anchor from a segment, hold down [Alt]/[Option], position the mouse pointer at the top border of the segment until it turns to a glue tube, and click. The tilt anchor is deleted.



Straighten Pitch

If you want to compensate for the rise and fall of notes, i.e. the deviation of the micro-pitch curve from the representative pitch, you can use the Straighten Pitch slider. This correction comes in handy when a note is played flat (pitch rises) or sharp (the pitch falls) at the end. Proceed as follows:

1. Select the segments whose pitch you want to straighten.
2. Move the Straighten Pitch slider to the right.
The pitch of the selected segments is straightened.



This micro-pitch looks a bit off. By moving the Straighten Pitch slider to the right...



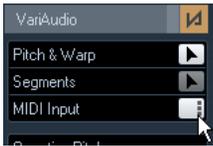
...the micro-pitch curve is straightened.

MIDI Input

You can change the pitch on the fly by selecting the segment you want to change and pressing a key on your MIDI keyboard or using the Virtual Keyboard (see the chapter “Playback and the Transport panel” in the Operation Manual).

Proceed as follows:

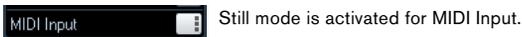
1. After having corrected the segmentation, select the segment for which you would like to change the pitch.
2. Activate the Pitch & Warp tool and click the MIDI Input button.



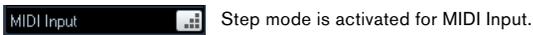
3. Press a key on your MIDI keyboard or use the Virtual Keyboard to change the pitch of the segment.
The pitch of the segment changes according to the note you play.

The MIDI Input function has two modes: Still mode and Stop mode. You can switch between them by [Alt]/[Option]-clicking on the MIDI Input button:

- In Still mode you can select individual segments by clicking on them and change their pitch by pressing a MIDI key. You can also select several segments and press a MIDI key to change the pitch of several segments simultaneously. The pitch of the first selected segment is changed to the pitch of the MIDI note you play. The pitches of the other selected segment are changed by the same amount.



- In Step mode you can step through the segments by selecting the first segment that you would like to change and pressing a MIDI key. The next segment will automatically be selected afterwards. This allows you to work in a more creative way, for example, to develop completely new melody lines via MIDI.



4. When you are done, deactivate the MIDI Input button.
⇒ MIDI controller data like pitchbend or modulation are ignored.

Warping segments

- ⚠ Any correction of the segmentation must be applied before warping segments.

Time correction, i.e. warping at segment level, is useful if you want to align a musical accent to a certain position, or change or quantize the timing of single segments in monophonic vocal recordings. When warping audio segments, warp tabs will be created. These are shown on the VariAudio and the AudioWarp tabs of the Sample Editor Inspector. (For information on warping complete audio files, see “Free Warp” on [page 51](#).)

To warp a segment, proceed as follows:

1. On the VariAudio tab activate the Pitch & Warp tool.
2. To change the timing of a segment, move the mouse pointer over the start/end of the segment.
The mouse pointer becomes a double arrow and the warp tabs are displayed in the ruler.
3. Drag the start/end of the segment to the desired position.

If the Snap button is activated, the segment border will snap to the grid. When you drag the segment border, warp tabs are shown not only at the border but also at the adjacent segment borders to indicate which portions of the audio are stretched/affected.



⇒ Warping a segment will also change the timing of the adjacent segments.

⇒ Timing modifications introduced this way will not adapt to the project tempo. If this is what you want, use Musical Mode (see “[AudioWarp: Tempo matching audio](#)” on [page 47](#)).

- You can change the insert position of a warp tab in the audio by clicking and dragging the warp tab handle in the ruler. This will change the warping (see [“Editing Warp tabs”](#) on [page 65](#)).
- Hold down [Shift] (by default) to delete warp tabs. To delete a warp tab, hold down the tool modifier so that the pointer becomes an eraser and click on the warp handle.
- If you are not satisfied with your changes, you can revert the timing of the selected segments by choosing the “Warp Changes” option from the Reset pop-up menu (see [“Reset”](#) on [page 66](#)).

Editing Warp tabs

In some cases the beginning of the waveform does not correspond to the beginning of a segment, e.g. when the audio starts with non-tonal portions like breath sounds (see [“Understanding the waveform display in VariAudio”](#) on [page 57](#)). But when it comes to warping, any changes you wish to make must affect the waveform as a whole.

You can of course change the segmentation to achieve this, but if you want to pitch your audio afterwards, this would affect also any non-tonal portions of the audio. If this is not what you want, proceed as follows:

1. Activate the Pitch & Warp tool and activate the Snap button.



In this example the beginning of the segment does not correspond to the beginning of the waveform.

2. Move the mouse pointer over the start of the segment so that it becomes a double arrow and drag the segment start to the beginning of the bar. The segment border snaps to the grid at the exact bar position.



Now the beginning of the segment matches the beginning of the bar, but we want the beginning of the waveform to match the beginning of the bar:

3. Point at the warp handle displayed in the ruler so that it turns into a double arrow and drag it to the beginning of the waveform.

The background is displayed in orange to indicate which part of the waveform is affected by the change.



Now the beginning of the waveform matches the desired bar position.



Editing warp tabs can also be useful if you change the length of a segment that you have already warped. In this case, editing warp tabs can help you synchronize your audio again.

Reset

This pop-up menu at the bottom of the VariAudio tab allows you to reset the modifications you performed with the Pitch & Warp tool. It also lets you reset the changes you made in Segments mode by reanalyzing the audio and returning to the original segmentation. The following options are available:

Function	Description
Pitch Changes	If you select this option, pitch changes including micro-pitch modifications with the tilt micro-pitch tool are reset either for the selected segments (if available) or for the whole file.
Warp Changes	If you select this option, warp changes are reset.
Pitch + Warp Changes	If you select this option, pitch, micro-pitch, and warp changes are reset either for the selected segments (if available) or for the whole file.
Reanalyze Audio	If you select this option, the audio is reanalyzed and all your segmentation changes are reset.

⇒ You can set up key commands for the reset and the re-analyze function in the Sample Editor category of the Key Commands dialog (see the chapter “Key Commands” in the Operation Manual).

Listening to your modifications

You can listen to the results of your modifications using the following methods:

- By activating Acoustic Feedback on the toolbar. The segments are played back so that you can easily audition your pitch modifications while editing.
- By using the Play tool on the toolbar.
- By using the Audition and the Audition Loop tool on the toolbar.
- By using cycle playback in the Project window.

If you want to compare the original to the modified audio (i.e. hear the audio without pitch or warp modifications), you have the following possibilities:

- You can disable your pitch modifications by clicking the Disable Pitch Changes button on the VariAudio tab or by setting up and using the “VariAudio - Disable Pitch Changes” key command in the Key Commands dialog, Sample Editor category (see the chapter “Key Commands” in the Operation Manual).
- You can disable your warp modifications by clicking the Disable Warp Changes button on the AudioWarp tab or by setting up and using the “VariAudio – Reset Warp Changes” key command in the Key Commands dialog, Sample Editor category (see the chapter “Key Commands” in the Operation Manual).

Functions – Extract MIDI...

This function extracts a MIDI part from your audio. This is useful if you have an audio event with a voice you like and you want to create an identical second voice with a MIDI instrument. The extracted MIDI part can then be used to print out notes from within the Score Editor or to export it as a MIDI file (see the chapter “File Handling” in the Operation Manual).

⇒ Before extracting MIDI from your audio you should correct the segmentation. Otherwise, you will have to correct segmentation errors later in the MIDI part. Transition changes, tilting the micro-pitch curve, Quantize Pitch, and pitch corrections will also be taken into account.

The result depends on the quality and the characteristics of your audio.

Proceed as follows:

1. Open the VariAudio tab.
2. Open the Functions pop-up menu and select “Extract MIDI...”.
The “Extract MIDI” dialog opens.

3. Select an extraction mode in the corresponding pop-up menu to include or exclude pitchbend events.

Pitchbend events are MIDI controller data that is saved in a MIDI file and that creates pitch transitions between MIDI notes. The following options are available:

Option	Description
Just Notes and no Pitchbend Data	If you select this option, only notes will be included in the MIDI part.
Notes and Static Pitchbend Data	If you select this option, a pitchbend event will be created for every segment. Select a pitchbend value from 1 to 24 in the Pitchbend Range field. When you are working with an external MIDI controller, it might be necessary to set it to the same value.
Notes and Continuous Pitchbend Data	If you select this option, pitchbend events that correspond to the micro-pitch curve will be created. Select a pitchbend value from 1 to 24 in the Pitchbend Range field. The setting should correspond to the same value on your MIDI controller or the VST instrument being controlled. Note that although the graphic representation of the pitchbend curve is smoothed, all pitchbend data is included.

4. Open the Destination pop-up menu and select an option to decide where the MIDI part will be placed.
The following options are available:

Option	Description
First Selected Track	If you select this option, the MIDI part will be placed on the first selected MIDI or instrument track. Note that any MIDI parts from previous extractions that are on this track will be deleted.
New MIDI Track	If you select this option, a new MIDI track will be created for the MIDI part.
Project Clipboard	If you select this option, the MIDI part is copied to the clipboard so that you can insert it at the desired position on a MIDI or instrument track in the Project window.

⇒ If you have opened the Sample Editor from the Pool and the audio file does not form part of your project, the MIDI part will be inserted at the Project start position.

5. Click OK.
A MIDI part is created.

⇒ If your audio event references only a section of the audio clip, only this range will be extracted.

You can also use a key command to extract your audio as MIDI. In this case no dialog opens and the settings that were used for the previous extraction are used instead. For further information on setting up key commands, see the chapter “Key Commands” in the Operation Manual.

Flattening realtime processing

You can “flatten” realtime processing at any time. This can be done to serve two purposes: to reduce the CPU load and to optimize the sound quality of the processing. The flatten function takes the following into account:

- Warp modifications (see “Free Warp” on page 51 and “Warping segments” on page 64), even when Bypass is activated. After the flattening, your Warp tabs will be lost. However, you can undo this function as usual.
- VariAudio pitch modifications (see “Changing the pitch” on page 61), even when Bypass is activated. In this case, the Realtime algorithm (Solo preset) will be used. After the flattening, your VariAudio data will be lost. However, you can undo this operation.
- Event transpose (see the chapter “The Transpose functions” in the Operation Manual).
- Select the audio event(s) that you want to process and select “Flatten” from the Realtime Processing submenu of the Audio menu.

Also use this function before applying any offline processing. When the flatten processing is applied, a copy of the original file is automatically created in the Pool so that the original audio clip remains intact.

Selecting an algorithm for the flattening

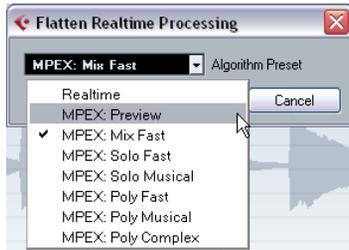
- ⚠ In the Pool, you can select an algorithm for several selected clips at a time.
- ⚠ If you are working with VariAudio pitch shifting, the Realtime algorithm (Solo preset) will be used automatically.

When you flatten the realtime processing, you can use the MPEX 4 algorithm to process the audio, which may produce better sound quality than the realtime processing. Apart from offline processing, this is the only way to achieve polyphonic formant conserving pitch shifting.

Proceed as follows:

1. Select the audio event(s) you wish to process.
2. Select “Flatten” from the Realtime Processing submenu of the Audio menu or use the corresponding button on the Process tab.

If you did not perform any pitch modifications, a dialog opens where you can select an algorithm for the processing. You can either select the MPEX 4 algorithm, which will produce the highest sound quality, or the Realtime algorithm which is much quicker but will not improve the audio quality of the processing (although it will reduce the CPU load).



⇒ This dialog will not open when the time stretching factor is outside the range of 0.5 and 2 or when you introduced VariAudio pitch modifications. In these cases the Realtime algorithm will be used.

For the MPEX 4 algorithm the following quality settings are available:

Option	Description
Preview	Use this mode only for preview purposes.
Mix Fast	This mode is a very fast mode for preview. This works best with composite music signals (mono or stereo material).
Solo Fast	Use this mode for single instruments (monophonic material) and voice.
Solo Musical	Same as above but higher quality.
Poly Fast	Use this for processing monophonic and polyphonic material. This is the fastest setting that gives still very good results. You can use this for drum loops, mixes, chords.
Poly Musical	Use this for processing monophonic and polyphonic material. This is the recommended MPEX default quality setting. You can use this for drum loops, mixes, chords.
Poly Complex	This high quality setting is quite processor intense and should be used only when processing difficult material or for stretch factors above 1.3.

The Realtime presets can be selected from the Algorithm pop-up on the Sample Editor toolbar, see [“Selecting an algorithm for realtime playback”](#) on page 51.

3. Select an algorithm preset and click OK.

After the processing, any loop that was previously stretched in realtime or had been pitch shifted will play back exactly the same, but Musical Mode will be deactivated and the realtime pitch shifting will be set to 0.

The audio clip is now like any standard audio clip before applying realtime processing, i.e. it does not follow tempo changes. The flattening processing function is best used when you have determined the tempo or key of a project, but you can of course always adapt the audio to a new key or tempo. In this case, it is better to revert to the original audio clip rather than to process the already processed file again.

Unstretching audio files

By selecting “Unstretch Audio” from the Realtime Processing submenu of the Audio menu, all realtime time stretching (by sizing or by warp tabs) is removed.

⇒ Note that realtime transpose (in the info line) and Musical Mode will not be removed by this.

Whether the “Unstretch Audio” menu item is available depends on whether the time stretching has been applied at event or clip level:

- If you have sized an audio event in the Project window using “Sizing Applies Time Stretch”, you can undo the time stretching by selecting the event in the Project window and then applying “Unstretch Audio”. This removes all time stretching and warp tabs.
- When you have entered a tempo and/or length on the toolbar, this information is saved for the source clip. These changes cannot be undone using “Unstretch Audio”.

5

Video

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.

⚠ Because Cubase 5.5 uses a completely new video engine, QuickTime 7.1 and a video card supporting OpenGL 1.2 (OpenGL 2.0 recommended) are now required for video playback!

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.

⚠ 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. For more information on codecs, see the section “Codecs” on [page 70](#).

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 in Windows.
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-2	This container format is used for DVD authoring. It can also contain AC3 multi-channel audio and has the file extension “.m2v”.
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.

⚠ 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 (e.g. .mov, .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. In Cubase the following frame rates are available:

- 23.98fps

This frame rate is used for film that is being transferred to NTSC video and must be slowed down for a 2-3 pull-down telecine transfer. It is also used for the type of HD video referred to as "24p".

- 24 fps

This is the true speed of standard film cameras.

- 24.98fps

This frame rate is commonly used to facilitate transfers between PAL and NTSC video and film sources. It is mostly used to correct for some error.

- 25 fps

This is the frame rate of PAL video.

- 29.97 fps

This is the frame rate of NTSC video. The count can be either non-drop or drop-frame.

- 30fps

This frame rate is not a video standard anymore but has been commonly used in music recording. Many years ago it was the black and white NTSC broadcast standard. It is equal to NTSC video being pulled up to film speed after a 2-3 telecine transfer.

- 59.98fps

This rate is also referred to as "60p". Many professional HD cameras record at 59.98fps. While 60fps could theoretically exist as a frame rate, no current HD video camera records at a full 60fps as a standard rate.

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 fullscreen mode on a computer monitor or HD television screen.

⇒ You can also use more than one video card to achieve the same result. The use of two dual display cards in one system (a total of four monitors) is a very common setup for film postproduction systems. One output is dedicated to video and the other three can be used for Cubase and other applications.

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.

⇒ 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.

⚠ Under Windows, 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 in Cubase

The following sections describe the basic operations necessary for preparing a Cubase project involving video. It is advisable to store 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 straightforward 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. If there is no audio stream within the container file, you will get the error message “No compatible audio stream found in file”. Click OK and the video stream will continue to be imported.

⇒ 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 (see the chapter “The Pool” in the Operation Manual for details).
- By using drag and drop from the Windows Explorer, the Mac OS Finder, the Pool, or the MediaBay.

⇒ 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). For further information about extracting audio from a video file, see [“Extracting audio from a video file”](#) on [page 75](#).

⇒ 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”.

⚠ 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 (see below).

Video files in the Project window

Video files are displayed as events/clips on a video track, with thumbnails representing the frames in the film.



In the track list and Inspector, you find the following buttons:

Button	Description
Mute Video	When this is activated, video playback is disabled, but playback of any other events in the project continues. This increases the performance of Cubase when realizing operations that do not require watching the video.
Show Frame Numbers	When this is activated, each thumbnail is shown with the corresponding video frame number.
Show Thumbnails	With this button you can activate/deactivate the thumbnails of a video track.
Lock	When this is activated, the video event will be locked. For more information about event locking, see the chapter “The Project window” in the Operation Manual.

⇒ Some of these buttons may not be visible in the track list. With the Track Controls Settings dialog you determine which buttons are displayed in the track list. For more information about customizing track controls, see the chapter “Customizing” in the Operation Manual.

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 re-drawing 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.

⇒ 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.

- Pull down the Media Menu and select “Generate Thumbnail Cache”.

⇒ “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

⚠ 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.

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. For further information on the Device Setup dialog, see below.

Video is played back together with all other audio and MIDI material, using the Transport controls.

Video settings in the Device Setup dialog

In the Device Setup dialog you determine which device is used for playing back video files. You can switch between different output devices during playback.

Device	Format	Offset (ms)	Active
Onscreen Window	Fixed	0	<input checked="" type="checkbox"/>
Blackmagic Video Output	Blackmagic PAL - RGB, 720x576	0	<input type="checkbox"/>

The Video Player page in the Device Setup dialog

To set up a video output device, proceed as follows:

1. Pull down 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. For further information on output devices, see the section "Video output devices" on page 71.
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.

⇒ 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.

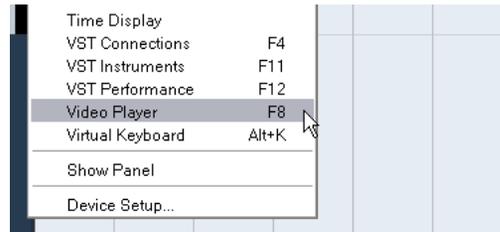
⇒ The offset is only used during playback. It is defeated in stop and scrub mode so that you always see the correct video frame.

- 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.

Playing back video on the computer screen

The Video Player window is used for playing back video on your computer screen.

- To open the Video Player window, pull down the Devices menu and select Video Player.



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.



The following options are available:

Option	Description
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 fullscreen 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.

Option	Description
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. Higher settings make the video display sharper and smoother, but lead to an increased processor load.

- Drag the borders, just like when resizing other windows.
 - ⇒ 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:

Option	Description
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.

- ⇒ When the video is played back in fullscreen 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. For more information about the jog and scrub controls, see the chapter “Playback and the Transport panel” in the Operation Manual.

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 lock video events just like other events in the Project window, and 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.

- ⇒ 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.

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 (see the chapter “The Project window” in the Operation Manual for details). The extracted audio stream is added to the project on a new audio track and can be edited like all other audio material.

There are several ways to extract audio from a video file:

- By activating the “Extract Audio From Video” option in the Import Video dialog (see the section “[Importing video files](#)” on [page 72](#)).
- 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.

 These functions are not available for MPEG-1 and MPEG-2 video files.

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.

To replace the audio stream in a video file, proceed as follows:

1. Place the left locator at the start of the video file in Cu-base. This will ensure that your audio and video streams are synchronized.
2. Pull down 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 (for detailed information on this function, see the chapter “Export Audio Mixdown” in the Operation Manual).
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. This should be the one you created above.

5. Select the audio file and click Open.

The audio is added to the video file, replacing its current audio stream.

Once the process is completed, open the video file in a native media player and check for proper synchronization.

6

Plug-in updates

AmpSimulator

The AmpSimulator effect now has an updated plug-in panel. However, the parameters are the same as before.



AmpSimulator is a distortion effect, emulating the sound of various types of guitar amp and speaker cabinet combinations. A wide selection of amp and cabinet models is available.

The following parameters are available:

Parameter	Description
Drive	Controls the amount of amp overdrive.
Bass	Tone control for the low frequencies.
Middle	Tone control for the mid frequencies.
Treble	Tone control for the high frequencies.
Presence	Boosts or dampens the higher frequencies.
Volume	Controls the overall output level.
Amplifier pop-up menu	This pop-up menu is opened by clicking on the amplifier name shown at the top of the amp section. It allows you to select an amplifier model. The amp section can be bypassed by selecting "No Amp".
Cabinet pop-up menu	This pop-up menu is opened by clicking on the cabinet name shown at the top of the cabinet section. It allows you to select a speaker cabinet model. This section can be bypassed by selecting "No Speaker".
Damping Lo/Hi	Further tone controls for shaping the sound of the selected speaker cabinet. Click on the values, enter a new value and press the [Enter] key.

Groove Agent ONE 1.1 update

Replacing individual samples

On the sample pads in Groove Agent ONE, you can now replace individual samples.

- To replace a sample mapped to a pad with another sample, drag the new sample to the pad, press [Alt]/[Option], and drop it.
- To replace a sample in a pad layer with another sample, drag the new sample to the Layer indicator, press [Alt]/[Option], and drop it onto the required layer.

Locating missing files

When a sample belonging to a preset cannot be found, Groove Agent ONE prompts you to locate the missing files. You can either click Ignore to skip this message, click Locate File to navigate to a specific folder containing the missing file(s), or click Search Folder to browse a specific folder and any subfolders that might contain the missing file(s).

Saving and loading GAK archives

You can now save all Groove Agent ONE settings and the sample files referenced by the current configuration as a Groove Agent ONE kit. The file name extension of these kit files is "*.gak".

To save a GAK archive, proceed as follows:

1. Set up Groove Agent ONE the way you want it.
2. In the Exchange section, click the Export button. The "Export Groove Agent ONE kit" dialog opens in which you can specify a location and a name for the new archive.
3. Click Save.

The archive is created and the dialog is closed.

⇒ A plug-in preset file is created alongside the .gak file. This plug-in preset references the samples inside the .gak file. It can be browsed in the MediaBay, giving you access to all Groove Agent ONE settings (including all samples) from within Cubase.

To load a GAK file, proceed as follows:

1. In the Exchange section, click the Import button.
2. Navigate to the GAK file and click Open. The saved settings and all samples are imported into Groove Agent ONE.

Polyphony counter

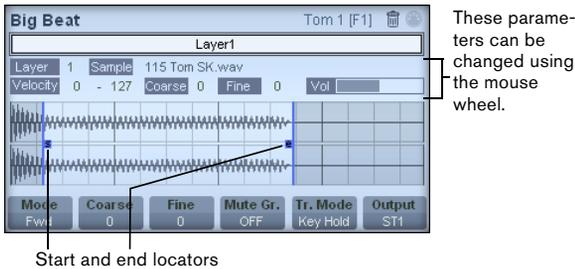
The new Polyphony counter in the LCD Display in the left half of the panel shows the number of pads currently playing.

New start/end locators in the waveform display

You can define the sample start and end points by dragging the s and e locators in the waveform shown in the LCD display. When you click on a locator and press [Ctrl], this will zoom in on the waveform and center the display around the locator. Note that the locators automatically snap to zero crossings.

Increasing/decreasing parameter values using the mouse wheel

As in other areas of Cubase, you can now increase or decrease the values for the parameters shown above the waveform in the LCD display by clicking and turning the mouse wheel.



LoopMash 1.2 update

New track volume control and VU meters

You can now change the relative volumes of your tracks with the volume control on the far right of each track. This is useful for level adjustments between tracks.

The VU meter to the left of the volume control provides visual feedback of the current track volume.

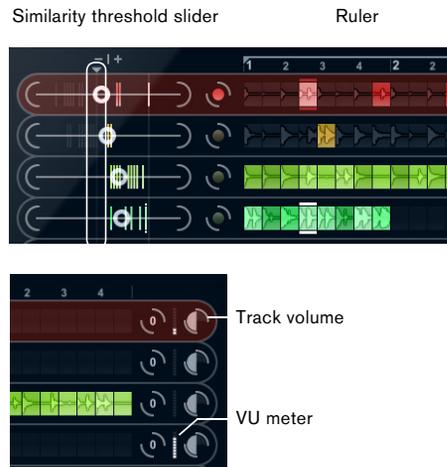
Setting the similarity threshold

Drag the new similarity threshold control (the thin line with handles at the top and bottom intersecting all similarity gain sliders) to the left or right to determine a minimum similarity that slices must match to be considered for playback.

Slices with a similarity below (i. e. to the left of) this threshold are not played.

New ruler showing bars and beats

At the top of the track section, a ruler showing bars and beats (using the project's time signature) is displayed.



REVerence update

REVerence has a new “Smooth Parameter Changes” button that is located at the top right, between the program slots and the Store/Recall/Erase buttons. If it is activated, a crossfade is performed when switching programs. Leave this button deactivated while looking for a suitable program or an appropriate setting for an impulse response. Once you have set up the program matrix to your liking, activate the button to avoid hearing artifacts when switching between programs.



True stereo

Impulse responses recorded as true-stereo files enable you to create a very realistic impression of the corresponding room. REVerence can only process true-stereo impulse response files with the following channel configuration (in exactly that order): LL, LR, RL, RR.

The channels are defined as follows:

Channel	The signal from this source...	...was recorded with this microphone
LL	left source	left microphone
LR	left source	right microphone
RL	right source	left microphone
RR	right source	right microphone

⇒ If your true-stereo impulse responses are only available as separate mono files, you can use the Export Audio Mixdown function in Cubase to create REVerence compliant interleaved files (see the chapter “Export Audio Mixdown” in the Operation Manual).

By default, REVerence automatically works in true-stereo mode when the plug-in is inserted on a stereo track and you load a 4-channel impulse response.

Therefore, if you are working with surround files, that is, 4-channel impulse responses recorded with a Quadro configuration (L/R, LS/RS), you need to insert the plug-in on an audio track with a 4.0 configuration. On a stereo track these files would be processed in true-stereo mode, too.

So how can you prevent REVerence from unintentionally processing surround files in true-stereo mode? The answer is a “Recording Method” attribute that can be written to the iXML chunk of the corresponding impulse response file. Whenever you load an impulse response with a 4-channel configuration on a stereo track, REVerence searches the iXML chunk of the file. If the plug-in finds the Recording Method attribute, the following happens:

- If the attribute is set to “TrueStereo”, the plug-in works in true-stereo mode.
- If the attribute is set to “A/B” or “Quadro”, the plug-in works in normal stereo mode and processes only the L/R channels of the surround file.

⇒ You can use the Attribute Inspector in the MediaBay to tag your own impulse response files with the Recording Method attribute. For more information, see the chapter “MediaBay” in the Operation Manual.

Studio EQ update

Each EQ band now features a button to invert the corresponding EQ band (i.e. reflect the curve along the x axis). This button is located at the bottom right of the Gain control.



This is very useful if you want to filter out unwanted noise. While looking for the frequency to omit, it sometimes helps to boost it in the first place (set the filter to positive gain). After you have found this frequency, you can use the Inv button to cancel it out.

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